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THE STARTING POINTS FOR FUNGI

G. W. Martin (Iowa City, Iowa)

In the 2nd edition of the International Rules of Botanical nomenclature (Jena, 1912, p. 32) Art. 3 reads: "The rules of nomenclature should neither be arbitrary nor imposed by authority. They must be simple and founded on considerations clear and forcible enough for everyone to comprehend and be disposed to accept". In the 3rd edition (Jena, 1935, p. 1) Art. 3 is amended to read: "The rules of nomenclature should be simple and founded on considerations sufficiently clear and forcible for everyone to comprehend and be disposed to accept". This was repeated without change in the Code compiled after the Stockholm Congress (Utrecht, 1952, p. 13) but was omitted from the edition issued after the Paris Congress. The deletion of the phrase, "neither be arbitrary nor imposed by authority" from the 1935 Rules, and the removal of the article from the 1952 Code may be interpreted partly as unconscious deference to the growing spirit of authoritarianism in the world and partly to a feeling that the rules are steadily growing less simple, clear and comprehensible. It might be well to replace the 1912 statement as a principle.

It is to be noted, as was amply demonstrated in the discussions at Stockholm in 1950, that there was at that time wide difference of opinion concerning the interpretation of Art. 20f of the 1935 Rules (Art. 19f of the 1912 Rules). As a result, very late in the discussions, Art. 23f of the 1952 Code was adopted by the close vote of 9 to 7 by the Special Committee for Fungi and approved by the Congress. It was incorporated, without change, in the 1956 Code as Art. 13f. As a result, Art. 13 recognizes eight starting points for the fungi: 1753 (Lichenes, Myxomycetes); 1801 (Uredinales, Ustilaginales, Gasteromycetes); 1821, 1822, 1823, 1828, 1830, 1832 (Fungi caeteri). The last six dates are, of course, those of the dates of publication of Fries's *Systema Mycologicum*, including the *Elenchus Fungorum*.

The present Art. 13 has now been in effect for a decade, and, in the opinion of many mycologists who have tried sincerely to apply it, it has proved to be unduly complicated, subject to varying interpretations and highly unsatisfactory. This is partly because of what seems to be the unnecessarily large number of starting points, and partly because Fries's interests were almost entirely with the large and more conspicuous fungi and the treatment of many of the smaller forms, especially of the Fungi Imperfecti, in which he was frankly not greatly interested, was based mainly on the work of others, not always, it has been claimed, with critical discrimination.

If the dissatisfaction with the present starting points is in reality not as widespread as I have sensed it to be, but merely the expression of an opinion held by a small group of mycologists, obviously nothing need be done about it. The dissidents will go their way and sooner or later the names they apply, where not in accord with the

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present system, will be replaced by others that are; a case in point would be the important work by Kühner and Romagnesi, *Flore analytique des champignons supérieurs*, 1953, in which the starting point adopted is Fries's *Epicresis* of 1838. There are doubtless others who, while not satisfied with the present rules, feel that it is better to put up with their complexities than to attempt to revise them.

If, however, a sufficient number of mycologists believe the present starting points for fungi are not satisfactory, several things might be done, of which the following seem to be most practicable:

1. Make the starting point for all fungi 1 May 1753, thus not only providing a single starting point for all fungi but uniting them in this respect with the great majority of other taxa covered by the botanical Code. Linnaeus, it is true, did not think highly of the fungi, but he did give binomials to the species of earlier systematists and most of his species can be recognized by reference to the descriptions and illustrations of the earlier authors he cites. This starting point has operated satisfactorily for the Myxomycetes and apparently for the Lichenes, and — what would answer some of the objections which have been expressed — even for the bacteria. It would have the further advantage of giving full priority to the work of Bulliard, Nees, Persoon, Schweinitz and other pre-Friesian authors. It was widely used by mycologists prior to 1905, and was designated as the starting point for all plants, including fungi, in the American Code of 1907, followed by many mycologists until 1935 and by some since that time.

2. Make the starting point for all fungi Persoon's *Synopsis Methodica Fungorum* of 1801. This is a comprehensive work, written by an author who was the leading mycologist of his era and whose interest in all groups of fungi then known was probably wider than that of Fries. Persoon's herbarium is still in existence and it is easier to typify his names than those of Fries. His work is at present the designated starting point for Ustilaginales, Uredinales and Gasteromycetes and a proposal by Hughes to add the Hyphomycetes to this list was presented to the Montreal Congress. This was amended by the Special Committee to include all Fungi Imperfecti and both the original proposal and the amended proposal were referred, for lack of time for discussion, to the Special Committee for Fungi for final action. The advantages of extending this starting point to all fungi are worthy of careful consideration.

3. Make the starting point of the *Fungi caeteri* 1 January 1821, the date of publication of Volume 1 of Fries's *Systema Mycologicum* and treat the other parts of that work on the same basis as other later works. This will interfere little with the several important works on the agarics and other larger fungi which have appeared since 1950 and have followed the current Code, and will permit a much more favorable approach to the other groups. This would not alter the illogical situation in other groups, but that is less serious. The Myxomycetes is a small group and few, if any, new combinations would be required if the starting point were to be changed, although undoubtedly some names now recognized as valid would have to be replaced by some now regarded as synonyms. If the Lichenes are considered an autonomous group it does not matter what starting point is used. If, as many mycologists suspect, they must eventually be intercalated amongst the *Fungi caeteri*, then the starting point for them becomes that of the *Fungi caeteri*. The Gasteromycetes is no longer regarded by many mycologists as a natural group and in the case of genera formerly included in the Gasteromycetes and now considered as closely related to the agarics and boletes, the starting point must be that of their relatives. Fortunately, the names of the great majority of them will not be affected by becoming subject to any of these proposals.

One of the arguments used at the Montreal Congress against any changes in the present rules was that it is now too late to make them. It may be pointed out that

if a considerable number of mycologists believe the adoption of the present rules was unwise and makes for undue complication and confusion, it is highly desirable that a change in the direction of simplicity and clarity be seriously considered before it becomes even later.

Another argument repeatedly used at the Montreal Congress was that the changes proposed in the report of the Committee on Fungi, as adopted by majority vote, had not been sufficiently discussed in advance of the Congress. This argument has great merit, but it applies equally to the present Art. 13f. This was not discussed in advance but was presented to the Committee on Fungi after long and sometimes acrimonious discussion and, as previously stated, was finally adopted by a vote of 9 to 7 shortly before the report had to be submitted to the Congress.

It is my present intention to present to the next Congress a proposal involving a restatement of those parts of Art. 13 relating to Fungi which will embody one of the three possibilities here outlined. I have already consulted a number of North American mycologists but before submitting a specific proposal, I feel it is desirable to ask all mycologists interested to present their views publicly on the subject.

LATER STARTING POINTS VERSUS THE TYPE METHOD*

Paul C. Silva (Urbana, Illinois)

Two articles recently published in Taxon (8: 86-90. 1959) take issue with my proposal to eliminate later starting points in algae (Taxon 7: 181-184. 1958). The first, by J. Komárek, Z. Pouzar, and J. Ruzicka, is thoughtfully written, although it clearly shows a lack of understanding of the type method. The second, by Rolf Grönblad and Arthur M. Scott, is largely a collection of specious and sophomoric arguments. The purpose of the present paper is to show how the type method has been distorted by these authors to accommodate and justify later starting points.

The type method is based on the following rationale: the application of a name is fixed by associating it with a type; for a taxon of the rank of species or below, the type is a preserved specimen, which is assumed to show sufficient characters to permit its association with a taxon. This rationale has been attacked by certain authors, including Komárek, as follows: for some plants a preserved specimen does not show sufficient characters to permit its association with a taxon; therefore, the assumption is invalid. Exceptions to the principle that botanical nomenclature should be based on type specimens have been introduced into the Code on the one hand by persons who were dealing with names not capable of being associated with type specimens (certain Linnaean and post-Linnaean names based on pre-Linnaean references), and on the other hand by persons who shared Komárek's opinion.

In the Cambridge Code we find the following statement (Art. 18): "In some species, however, the type is a description or figure given by a previous author." The example clearly indicates the intention of this exception: "the type of the name *Polyporus amboinensis* Fries is the figure and description in Rumph. *Herb. Amboin.* VI, p. 129, t. 57, fig. 1." At Stockholm this provision was changed to read (Art. 21, Note 2): "For a species without a type specimen, the type may be a description or figure." This conflicted, however, with another provision adopted at Stockholm (Art.

* This paper was submitted for publication prior to the Montreal Congress. Meeting at Montreal, the Committee for Algae decided to postpone action on the proposal to eliminate later starting points in algae pending further study of the question. Phycologists who favor retention of later starting points will be invited to submit detailed supporting arguments.

18, Note 3), which precluded the possibility of a species being without a type specimen: "If no holotype has been indicated by the author who described a taxon, or when the holotype is lost or destroyed, a substitute for it must be chosen.... The substitute may be either a *lectotype* or a *neotype.*" At Paris the conflict was resolved by changing "must" to "may".

Turning again to the Cambridge Code, we find this statement (Art. 18): "Where permanent preservation of a specimen or preparation is impossible, the application of the name of a species or subdivision of a species is determined by means of the original description or figure." This provision has authorized workers to ignore type specimens for whatever groups in which in their opinion it is impossible to preserve specimens. For Komárek *et al.* these groups include phytoflagellates, blue-green algae, and other "small fresh-water Algae." In his recent revision of the planktonic blue-green algae of Czechoslovakia, Komárek (in J. Komárek and H. Ettl, Algologische Studien, Prag, 1958) considers as type of a species the original diagnosis or, in groups with later starting points, the diagnosis given by the later starting point author. Surely it must be wishful thinking, perhaps motivated by a desire to dispense with the bother of dealing with preserved materials, to suppose that there are any plants for which it is impossible to permanently preserve specimens. I wish to emphasize, however, that my insistence that all plants can be preserved does not deny the possibility that certain plants when preserved may fail to exhibit sufficient diagnostic characters to permit their association with taxa (cf. my statement in Taxon 8: 9, last paragraph).

It might be argued that no specific or infra-specific name not associated with a type specimen should be accepted. On the other hand, inasmuch as there will always be diversity of opinion as to which taxon any given type specimen should be associated with, the acceptability of a name probably should not depend upon the existence of a type specimen, but upon the soundness of the taxonomic decision, regardless of the nature of the type elements taken into consideration. Later starting point proponents claim that almost all, if not all, algae described by "older authors" in later starting point groups are incapable of "exact" identification. This is certainly debatable. The overriding consideration, however, is that in an instance where reasonably certain identification is impossible, obviously the only admissible taxonomic practice is to shelve the name as a *nomen inquirendum* (or *nomen dubium*, as such a name was called in the Cambridge Code, Art. 63, which was deleted at Stockholm because it seemed to be concerned more with taxonomy than with nomenclature). At this point I should like to correct Komárek and vigorously deny that I have ever argued that "species can be rejected, if their names have been used in different senses and so have become a long persistent source of error. (Art. 65)." On the contrary, in two papers (Univ. Calif. Publ. Bot. 25: 249, 1952; Taxon 7: 183, 1958) I have criticized the provisions for *nomina ambigua* and *nomina confusa* as being inimical to the type method. In the paper reviewed by Komárek, my exact words were these: "If the type method is faithfully followed so that all names are either typified or, if not capable of typification, shelved as *nomina inquirenda* *, the Code is seen to be successful in providing a basis for a stable nomenclature for all groups using 1753 as the starting point."

Komárek incorrectly states that I consider "as one of the chief disadvantages of the 'later starting points' the impossibility of typification." Nowhere have I used these words or implied this idea. My statement was this: "Later starting points create nomenclatural confusion through divergent interpretations of their application," following which I discussed two opposed methods of typifying names in later starting point groups. All proponents of later starting points have avoided the question of

* erroneously spelled *inquirendae.*

typification, partly because they largely disregard preserved specimens, partly because of a lack of appreciation of the role of types in critical taxonomic work.

Komárek *et al.* believe that one of the desirable features of later starting points is that they "restrict, to a considerable degree, the possibility of the subjective and arbitrary conception of different taxa." Taxonomic conceptions are subjective by definition; subjectivity in taxonomy exists regardless of nomenclature. As for the word "arbitrary", this suggests the association of a name with a taxon on a non-rational basis, a practice which we hope exists only in theory, but which if actually carried out would be independent of later starting points. The purpose of the Code is to regulate nomenclature, not taxonomy; "subjective and arbitrary conception of different taxa" clearly lies in the realm of taxonomy. The claim that later starting points improve taxonomy conflicts with the fact that they restrict taxonomic freedom. Because of a later starting point, I am not permitted to make a taxonomic decision that the plant I have in hand is representative of a species described, for example, by Kützing, even though the type material [conserved at Leiden] leaves no doubt in my mind as to the identity. One might argue that I am free to make the taxonomic decision, even though I may not use the accompanying nomenclature; but surely taxonomy without nomenclature to express it is meaningless.

Another argument given by Komárek *et al.* in support of the provision for later starting points is that it "restricts to an important extent the literature necessary for work in taxonomy." While this may be a practical consideration, the idea that critical taxonomic work can be done with reference only to recent literature is naive. It is difficult to imagine how I could have proceeded with my studies on *Codium* had I restricted myself to O. C. Schmidt's monograph (1923) and subsequent work.

Komárek *et al.* are so enthusiastic about later starting points that they would add still others, including Pascher's monograph (1939) for Xanthophyceae. Perhaps in due time someone will propose that my forthcoming monograph on *Codium* serve as a later starting point for that genus. Carrying the idea to a logical conclusion, we should propose that all monographs automatically upon publication serve as later starting points for their respective groups, thereby transporting taxonomists into the same euphoria enjoyed by physiologists.

The main point stressed by Grönblad and Scott is that desmidiologists have faithfully abided by their later starting point. I have examined a large number of papers by contemporary desmidiologists and have yet to find any evidence that they follow the provision for later starting points, even though they all may think they are doing so. The universal citation of pre-starting point authors and dates supports my claim. Even in Grönblad and Scott's critique there appears such a citation: *Cylindrocystis brebissonii* Meneghini 1838. In accordance with the Code this species should be cited *Cylindrocystis brebissonii* (Ralfs) DeBary (= *Penium brebissonii* [Menegh.] Ralfs). Whether the type is a specimen in Meneghini's herbarium at Firenze, Meneghini's description, a specimen in Ralfs' herbarium, or Ralfs' description and figure is something for desmidiologists to decide.

Grönblad and Scott decry the activities of professional nomenclators. Yet the need for experts in nomenclature has arisen because of the activities of taxonomists not expert in nomenclature. Basically the Code is beautifully simple and provides a stable, yet flexible, nomenclature to accommodate any taxonomic arrangement. Unfortunately, exceptions (such as later starting points, conservation, and tie-ins with zoological nomenclature) and needless elaboration, coupled with failure to complete the change-over from the circumscription method to the type method, have resulted in a Code which is verbose and in certain respects difficult to interpret and apply. All of my recent proposals have had as their purpose the simplification of the Code to hasten the time when professional interpreters (and manipulators) of the Code may devote their time and energy to taxonomy rather than to nomenclature.

Grönblad and Scott believe that eliminating the later starting point for desmids "would indeed result in confusion, and would be almost catastrophic for the systematics of desmids." This is an undocumented claim. Confusion and catastrophe are precluded by the excellence of the starting point work, Ralfs' "The British Desmidieæ," which attempted to incorporate all earlier work and to follow priority strictly. There were few workers who dealt extensively with desmids prior to Ralfs, and Ralfs was in correspondence with almost all of them. His monograph is indeed a taxonomic masterpiece. In its thoroughness, in its superb documentation, in the attempts to ferret out existing names and to determine their application, in the consistent adherence to priority, and in the logical nomenclature which thereby resulted, "The British Desmidieæ" stands alone in its day. The remarkable and regrettable fact is that Ralfs' standard of performance has seldom been matched by phycologists during the succeeding century. By using Ralfs' monograph as the starting point for desmids, desmidiologists shirk their responsibility of maintaining his standard and repudiate the principle that he considered foremost and which guided him to the adoption of a sound and fair system of nomenclature, namely, priority. In Ralfs' preface we find the following statement: ".... for it is surely unjust that the credit due to the discoverer or first describer of a plant should be ascribed to one whose sole merit in regard to it has been to transfer it from one genus to another." Contrary to Ralfs' code of ethics, solely by virtue of the fact that he treated a particular species in his monograph, this species is linked to his name rather than to the name of the describer.

Certain species of Corda, Ehrenberg, and Morren were not considered by Ralfs because he lacked the pertinent literature. In addition, two works published in 1847, each containing a few species of desmids, were not seen by him: Focke's "Physiologische Studien," Heft 1; and Kützing's "Tabulae Phycologicae," Band I (in part). In all, Ralfs overlooked or purposely omitted about 30 species, almost all of which seem incapable of typification and probably will forever remain *nomina inquirenda.* Two species, which have been identified with some degree of confidence, are currently accepted: *Closterium libellula* Focke (this binomial is maintained even when the taxon is considered conspecific with *Penium closterioides* Ralfs!) and *Cosmarium dentiferum* Corda, both revalidated by Nordstedt. I doubt that more than one of these pre-1848 species would be found to displace a species recognized by Ralfs. In Nordstedt's "Index Desmidiacearum" there are 18 pre-1848 binomials which are earlier homonyms of post-1848 names; most of these would require the proposal of substitute names. The fact that substitute names usually have not been proposed in such instances is not due to a realization by desmidiologists that because of the later starting point the naturally later homonym is artificially legitimate, but to a lack of concern, especially since all of the earlier homonyms are either isonyms of accepted names or *nomina inquirenda.* In at least two instances, however, later homonyms have been renamed, and the current use of the substitute names, which are artificially superfluous and illegitimate, is not in accordance with the Code.

Four generic names used by Ralfs have been conserved, but in view of the 1848 starting point the conservations are unnecessary, and at my instigation they were removed from the Paris Code; but the fact that they were legislated shows a lack of understanding of the meaning and application of the later starting point. Should desmid nomenclature revert to 1753, these four conservations would again be in order and could be reinstated.

In preparing the Index Nominum Algarum (cf. Taxon 7: 251. 1958) there would seem to be no alternative to ignoring later starting points. The man-hours available to the project are scarcely sufficient to unravel natural entanglements let alone the artificial complications superimposed by later starting points. The validity of any name depends upon its date of publication in relation to the starting point for the

group of plants with which it is associated in accordance with the type method. Therefore, in theory before any name can be entered into the Index it must be typified. Granted that in actual practice, and especially in recent literature, most names can be assigned to major groups of algae without having to typify them, the number of names, especially in old literature, whose application to one or another algal group can be ascertained only by typification is still large enough to constitute a major obstacle to completion of the Index. Similar considerations apply to preparation of the Index Nominum Genericorum.

THE CITATION OF WOOD SPECIMENS AND HERBARIUM VOUCHERS IN ANATOMICAL RESEARCH

William L. Stern and Kenton L. Chambers (Yale University, New Haven, Connecticut)

The names of taxonomic groups, assigned by taxonomists working under a uniform system of nomenclature, are intended to provide a stable and unambiguous means of reference for anyone interested in knowledge of living organisms. The need for names is basic to biological research; only through a uniform system of nomenclature can scientists communicate their findings for others to confirm or reject. That is, data obtained from observations and experiments with organisms have meaning only if we know the kinds of organisms studied — identified by their scientific names — and the conditions under which they were observed. The taxonomists' system of classification provides names for all levels of natural relationship, from division and class down to variety and form. Other biologists, when documenting a particular piece of research, may identify their selected organisms by names chosen from the most appropriate taxonomic level. Thus, a phytogeographer may compare the distribution of the Araliaceae and Umbelliferae, a physiologist may study auxin synthesis in *Phaseolus vulgaris*, and a genecologist may interest himself in cloned individuals of *Potentilla glandulosa* subsp. *reflexa*. In each case the research deals ultimately with individual organisms, but taxonomy has supplied class names adequate for unambiguous reference to them.

Taxonomy itself, on the other hand, depends for documentation not upon names or descriptions but upon individual plants, preserved in some way as permanent objects of reference. Traditionally the plant specimens that initially provide the taxonomist with his basic data are themselves dried and stored in herbaria. These types, population samples, and vouchers, however they may be preserved, link our system of taxonomic concepts to the real world of nature. However, taxonomists today draw increasingly upon information from such other disciplines as cytology, systematic anatomy, and comparative biochemistry and in these fields, also, citation of reference specimens is necessary if results are to be valuable to taxonomy. The inevitable nomenclatural ambiguities and errors in identification usually can be resolved if voucher material is available. The need for herbarium vouchers is well known to cytologists [1], but it is perhaps less widely appreciated by workers in systematic wood anatomy. Our specific intent in this paper is to emphasize the importance of voucher specimens in anatomical research and to provide a concise system for designating wood samples and herbarium material in published accounts.

The identification of wood specimens used in anatomical research should be founded primarily on adequate herbarium material collected from the same plant

[1] Rattenbury, J. A. 1948. Chromosome number publication. Madroño 9: 257-258.

from which the wood was derived. For several reasons the determination of species on the basis of wood structure alone is often difficult or questionable. Only rarely do the original descriptions of plant species include any reference to their xylem anatomy, and in a majority of cases the anatomy has never been described. Even when xylem structure is known, it may not by itself be an adequate criterion for distinguishing among related species. In *Quercus*, *Pinus*, and *Populus*, for example, species readily recognizable on the basis of external morphology may be essentially identical in their wood anatomy. In other genera it is sometimes possible accurately to identify a species using the characters of the wood alone, especially if the geographical origin of the specimen is known. However, the careful citation of both the wood specimen studied and its corresponding herbarium voucher always provides future workers with the necessary references should taxonomic changes or ambiguities make reinvestigation of the wood or voucher desirable. Too often, wood anatomists fail to provide information of this kind in their published research. We believe that this omission stems from the lack of convenient methods and suitable precedents for citation of specimens in this specialized field of study.

In the publication of anatomical research, the complete citation of wood specimens involves, 1) designating the wood sample, 2) telling where the sample is housed, and 3) telling where its herbarium voucher is housed. With this information other workers can easily locate not only the wood specimen studied but also the herbarium voucher upon which its taxonomic determination is based. It seems most feasible to present this information by a system of abbreviations such as that already in use for the herbaria of the world [2]. The principal wood collections of the world have been summarized in the "Guide to institutional wood collections" [3], published to provide an index and ready reference to available research material for anyone interested in the study of wood. This index contains detailed information on the location and size of collections, institutional publications, staff, research interests, special collections, voucher material, and the like. We wish to present here a list of abbreviations for the institutional wood collections of the world, based on the above "Guide," and to suggest procedures by which these abbreviations and those of "Index herbariorum" may be combined for standardized citation of wood specimens.

The citation of wood specimens is complicated by differences in the conditions of collection and the subsequent disposition of the woods and herbarium vouchers. Several categories can be recognized depending mainly upon whether the wood specimens were collected with herbarium vouchers, and if so, where those vouchers are located. In the list of abbreviations which follows, those wood collections which are associated with institutions having recognized herbaria are designated by the abbreviations for the herbaria assigned by Lanjouw and Stafleu, with a small "w" being added to symbolize a separate assembly of wood samples. For wood collections not associated with recognized herbaria, suitable abbreviations have been composed, each followed by a small "w".

The following key will illustrate examples of citing wood specimens utilizing our proposed abbreviations. A glance at the citation will immediately tell where the wood sample studied is located, whether or not it is associated with an herbarium voucher, who collected it and where the herbarium voucher is deposited. In the first case (I), voucher specimens are unknown or absent. If the collector is known (a), the citation consists of the abbreviation of the institutional wood collection followed by the name and number of the collector (if the collector employed no number, his

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[2] Lanjouw, J., and F. A. Stafleu. 1956. Index herbariorum I. The herbaria of the world. ed. 3. 224 pp. International Bureau for Plant Taxonomy and Nomenclature. Utrecht.

[3] Stern, W. L. 1957. Guide to institutional wood collections. Trop. Woods 106: 1-29.

name can be followed by *s. n., sine numero*). If the collector is unknown (b), the citation can include only the abbreviation of the wood collection and the accession number assigned in the collection to that sample. In the second case (II), herbarium vouchers are preserved in an herbarium. If these vouchers are not at the same institution with the wood sample (a), the citation consists of the abbreviation of the wood collection, the name and number of the collector and the standard abbreviation of the herbarium or herbaria containing voucher material. If the voucher is filed at the same institution with the wood sample (b_1), the citation consists of the abbreviation of the wood collection, the name and number of the collector and the standard abbreviation of the herbarium of that institution. In those cases in which the wood sample is a part of an herbarium specimen (b_2), it is only necessary to cite the name and number of the collector and the standard abbreviation of the herbarium.

I. Voucher unknown or absent	
a. Collector known	Fw; *Peters s. n.*
b. Collector unknown; wood associated only with accession number	Fw 2350
II. Voucher present	
a. Voucher not at same institution with wood sample	Fw; *Peters 987*, NY
b. Voucher at same institution with wood sample	
1. Sample obtained from wood collection	Fw; *Peters 987*, F
2. Sample obtained from herbarium	*Peters 987, F*

In the key, Fw stands for the wood collection of the Chicago Natural History Museum, F for the herbarium of that institution and NY is the abbreviation for the herbarium of the New York Botanical Garden.

An attempt has been made in the key to include every possible condition surrounding the disposition of wood samples and vouchers. Therefore, the method of citation may seem overly complex. The authors believe, however, that in practice, the scheme will be rather simple to apply

Index by Abbreviation

Aw	Cambridge: Arnold Arboretum.
AWIw	Summit: Archie F. Wilson Collection of the University of Illinois.
BBSw	Paramaribo: Landsbosbeheer Suriname.
BCTw	Sao Paulo: Brazilian Commercial Timbers.
BISHw	Honolulu: Bernice P. Bishop Museum.
BKFw	Bangkok: Section of Wood Technology.
BRIw	Brisbane: Botanic Museum and Herbarium.
BWCw	Syracuse: Harry Philip Brown Wood Collection.
BZFw	Bogor: Balai Penjelidikan Kehutanan Indonesia.
CLPw	College: Forest Products Research Institute.
CQTw	Brisbane: Reference Collection of Queensland Timbers.
CTFw	Nogent-sur-Marne: Centre Technique Forestier Tropical.
Dw	Delft: Forest Products Research Institute T. N. O.
DDw	Dehra Dun: Forest Research Institute and Colleges.
DEQw	Dendroxiloteca Ecuatoriana.
DUKEw	Durham: School of Forestry.

Fw	Chicago: Chicago Natural History Museum.
FBw	Freiburg: Forstbotanisches Institut.
FHOw	Oxford: The Imperial Forestry Institute Wood Collection.
FIw	Florence: Istituto Botanico.
FLw	Florence: Istituto Nazionale del Legno.
FPAw	South Melbourne: Division of Forest Products.
FRw	Frankfurt am Main: Botanisch-Paläobotanische Abteilung.
GMw	Gembloux: Collection J. Louis et C. Donis.
GTw	Georgetown: Forest Department.
HBw	Havana: Escuela Forestal.
IANw	Belem: Instituto Agronômico do Norte.
Kw	Kew: Museums of Economic Botany.
KEPw	Kepong: Forest Research Institute.
LAEw	Lae: Division of Botany.
LEw	Leningrad: V. L. Komarov Botanical Institute.
LISJCw	Lisbon: Laboratório de Histologia e Tecnologia de Madeiras.
Mw	Munich: Botanische Staatssammlung.
MADw	Madison: Forest Products Laboratory.
MBFw	Quito: Museo Botánico-Forestal.
MERw	Merida: Xiloteca-Facultad de Ciencias Forestales.
MEXFw	Mexico City: Xiloteca.
MUw	Munich: Ggbde. Forstbotanisches Institut.
MUNw	Munich: Institut für Holzforschung und Holztechnik.
NATw	Nathanya: Forest Research Station.
NYw	New York: New York Botanical Garden.
NYJw	New York: The Jesup Collection of Woods of North America.
OLw	Ottawa: Ottawa Laboratory.
PACw	University Park: Buckhout Laboratory.
PFPw	Pretoria: Forest Products Institute Wood Collection.
PRFw	Princes Risborough: Forest Products Research Laboratory.
RBw	Rio de Janeiro: Jardim Botânico.
RBHw	Reinbeck bei Hamburg: Bundesforschungsanstalt für Forst- und Holzwirtschaft.
RPw	Rio Piedras: Tropical Forest Research Center.
RTIw	Amsterdam: The Royal Tropical Institute.
RXw	Rio de Janeiro: Xiloteca da Divisão do Florestamento e Reflorestamento.
SFCw	Sydney: Forestry Commission of New South Wales.
STEw	Stellenbosch: Institute for Forestry and Wood Technology.
STXw	Santa Tecla: Xiloteca Nacional de El Salvador.
SVw	Havana: Estación Experimental Agronómica.
SWTw	Stockholm: Wood Technology Department.
SZDw	Szeged: Institutum Botanicum Universitatis.
TEFw	Tananarive: Inspection Générale des Eaux et Forêts.
TOFOw	Tokyo: Institute of Forest Botany.
TRTw	Toronto: Faculty of Forestry.
TSFw	Tharandt/Sachsen: Forstbotanisches Institut.
TWTw	Tokyo: Wood Technology Division.
Uw	Utrecht: Botanical Museum and Herbarium.

USw	Washington: Division of Woods, Department of Botany, U.S. National Museum.
VENw	Caracas: Instituto Botánico.
WIBw	Wageningen: Instituut voor Bosbouwkundig Onderzoek.
WLw	Wageningen: Laboratorium voor Plantkunde.
WZw	Whakarewarewa: Forest Research Institute.
Yw	New Haven: The Samuel James Record Memorial Collection.
ZAw	Zagreb: Wood Structure Section.
ZTw	Zurich: Institut für allgemeine Botanik.

Index by City

AMSTERDAM: The Royal Tropical Institute, Mauritskade 64, Amsterdam-O, Netherlands. RTIw

BANGKOK: Section of Wood Technology, Forest Products Division, Royal Forest Department, Bangkok, Thailand. BKFw

BELEM: Instituto Agronômico do Norte, Belém, Pará, Brazil. IANw

BOGOR: Balai Penjelidikan Kehutanan Indonesia (Forest Research Institute), Bogor, Indonesia. BZFw

BRISBANE: Botanic Museum and Herbarium, Botanic Gardens, Brisbane, Queensland, Australia: BRIw

BRISBANE: Reference Collection of Queensland Timbers, Forest Products Research Branch, Sub-Department of Forestry, 68 George Street, Brisbane, Australia. CQTw

CAMBRIDGE: Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Massachusetts, U.S.A. Aw

CARACAS: Instituto Botánico, Apartado 2156, Ministerio Agricultura y Cría, Caracas, Venezuela. VENw

CHICAGO: Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, Chicago 5, Illinois, U.S.A. Fw

COLLEGE: Forest Products Research Institute, College, Laguna, Philippines. CLPw

DEHRA DUN: Forest Research Institute and Colleges, Post Office New Forest, Dehra Dun, India. DDw

DELFT: Forest Products Research Institute T.N.O., Postbus 49, Delft, Netherlands. Dw

DURHAM: School of Forestry, Duke University, Durham, North Carolina, U.S.A. DUKEw

FLORENCE: Istituto Botanico dell'Università, Erbario Centrale Italiano ed Erbario Coloniale di Firenze, Via Lamarmora 4, Firenze, Italy. FIw

FLORENCE: Istituto Nazionale del Legno, Piazza T. A. Edison 11, Firenze, Italy. FLw

FRANKFURT AM MAIN: Botanisch-Paläobotanische Abteilung, Forschungs-Institut Senckenberg, Senckenberg-Anlage 25, Frankfurt am Main, Germany. FRw

FREIBURG: Forstbotanisches Institut der Universität Freiburg, Bertoldstrasse 17, Freiburg i. Br., Germany. FBw

GEMBLOUX: Collection J. Louis et C. Donis, Institut agronomique de l'Etat, Gembloux, Belgium. GMw

GEORGETOWN: Forest Department, Georgetown, Demerara, British Guiana. GTw

HAVANA: Escuela Forestal, Ministerio de Agricultura, La Habana, Cuba. HBw

HAVANA: Estación Experimental Agronómica, Santiago de las Vegas, La Habana, Cuba. SVw

HONOLULU: Bernice P. Bishop Museum, Honolulu 17, Hawaii, U.S.A. BISHw

KEPONG: Forest Research Institute, Kepong, Federation of Malaya. KEPw

KEW: Museums of Economic Botany, Royal Botanic Gardens, Kew, Richmond, Surrey, England. Kw

LAE: Division of Botany, Department of Forests, Lae, Territory of New Guinea. LAEw

LENINGRAD: V. L. Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R., Professor Popov Street 2, Leningrad 22, U.S.S.R. LEw

LISBON: Laboratório de Histologia e Tecnologia de Madeiras da Junta de Investigações do Ultramar, Jardim do Ultramar, Belém-Lisboa, Portugal. LISJCw

MADISON: Forest Products Laboratory, Madison 5, Wisconsin. U.S.A. MADw

MELBOURNE: see SOUTH MELBOURNE.

MERIDA: Xiloteca-Facultad de Ciencias Forestales, Facultad de Ciencias Forestales, Universidad de los Andes, Mérida, Venezuela. MERw

MEXICO CITY: Xiloteca, Instituto de Investigaciones Forestales, Edison 145, México (4), D. F., Mexico. MEXFw

MUNICH: Botanische Staatssammlung, Menzinger Strasse 67, München 19, Germany. Mw

MUNICH: Ggbde. Forstbotanisches Institut, Amalienstrasse 52, München, Germany, MUw

MUNICH: Institut für Holzforschung und Holztechnik der Universität München, Winzererstrasse 45, München 22, Germany. MUNw

NATHANYA: Forest Research Station, Division of Wood Technology, Department of Forests, Ilanoth, P. O. Box 88, Nathanya, Israel. NATw

NEW HAVEN: The Samuel James Record Memorial Collection, School of Forestry, Yale University, New Haven 11, Connecticut, U.S.A. Yw

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NEW YORK: New York Botanical Garden, Bronx Park, New York 58, New York, U.S.A. NYw

NOGENT-SUR-MARNE: Centre Technique Forestier Tropical, 45 bis, Avenue de la Belle-Gabrielle, Nogent-sur-Marne (Seine), France. CTFw

OTTAWA: Ottawa Laboratory, Forest Products Laboratories of Canada, Department of Northern Affairs and National Resources, Ottawa, Ontario, Canada. OLw

OXFORD: The Imperial Forestry Institute Wood Collection, Department of Forestry, Imperial Forestry Institute, University of Oxford, Oxford, England. FHOw

PARAMARIBO: Landsbosbeheer Suriname (Surinam Forest Service), P.O.B. 436, Paramaribo, Suriname. BBSw

PRETORIA: Forest Products Institute Wood Collection, Forest Products Institute, P. O. Box 727, Pretoria, Union of South Africa. PFPw

PRINCES RISBOROUGH: Forest Products Research Laboratory, Princes Risborough, Aylesbury, Bucks, England. PRFw

QUITO: Dendroxiloteca Ecuatoriana M.A.S., Instituto Ecuatoriano de Ciencias Naturales, P. O. Box 408, Quito, Ecuador. DEQw

QUITO: Museo Botánico-Forestal, Departamento Forestal del Ministerio de Economía, Calle Guayaquil No. 1914, Quito, Ecuador. MBFw

REINBECK BEI HAMBURG: Bundesforschungsanstalt für Forst-und Holzwirtschaft, Reinbeck bei Hamburg, Schloss, Germany. RBHw

RIO DE JANEIRO: Jardim Botânico do Rio de Janeiro, Rua Jardim Botânico 1008, Rio de Janeiro, Brazil. RBw

RIO DE JANEIRO: Xiloteca da Divisão do Florestamento e Reflorestamento, Instituto Nacional do Pinho, Rua México, Rio de Janeiro, D. F., Brazil. RXw

RIO PIEDRAS: Tropical Forest Research Center, Agricultural Experiment Station, Río Piedras, Puerto Rico. RPw

SANTA TECLA: Xiloteca Nacional de El Salvador, Servicio Cooperativo Agrícola Salvadoreño Americano, Centro Nacional de Agronomía, Santa Tecla, El Salvador. STXw

SAO PAULO: Brazilian Commercial Timbers, Instituto de Pesquisas Tecnológicas, Praça Coronel Fernando Prestes 110, Caixa Postal 7141, São Paulo, Brazil. BCTw

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STELLENBOSCH: Institute for Forestry and Wood Technology, University of Stellenbosch, Union of South Africa. STEw

STOCKHOLM: Wood Technology Department, Section of Wood Structure and Properties, Swedish Forest Products Research Laboratory, Drottning Kristinas väg 67, Stockholm O, Sweden. SWTw

SUMMIT: Archie F. Wilson Collection of the University of Illinois, 54 Druid Hill Road, Summit, New Jersey, U.S.A. (This collection will ultimately be housed in the Department of Botany, University of Illinois, Urbana, Illinois, U.S.A.) AWIw

SYDNEY: Forestry Commission of New South Wales, Division of Wood Technology, 96 Harrington Street, Sydney, New South Wales, Australia. SFCw

SYRACUSE: Harry Philip Brown Wood Collection, Department of Wood Technology, College of Forestry, State University of New York, Syracuse 10, New York, U.S.A. BWCw

SZEGED: Institutum Botanicum Universitatis, Szeged, Hungary. SZDw

TANANARIVE: Inspection Générale des Eaux et Forêts (Section de Recherches Forestières), Tananarive, Madagascar. TEFw

THARANDT/SACHSEN: Forstbotanisches Institut der Technischen Hochschule Dresden, Fakultät für Forstwirtschaft Tharandt, Dippoldiswalder Strasse 7, Tharandt/Sachsen, Germany. TSFw

TOKYO: Institute of Forest Botany, Faculty of Agriculture, University of Tokyo, Hongo, Tokyo, Japan. TOFOw

TOKYO: Wood Technology Division, Government Forest Experiment Station, Ministry of Agriculture and Forestry, Meguro, Tokyo, Japan. TWTw

TORONTO: Faculty of Forestry, University of Toronto, Toronto, Canada. TRTw

UNIVERSITY PARK: Buckhout Laboratory, Pennsylvania State University, University Park, Pennsylvania, U.S.A. PACw

UTRECHT: Botanical Museum and Herbarium of the State University of Utrecht, Lange Nieuwstraat 106, Utrecht, Netherlands. Uw

WAGENINGEN: Instituut voor Bosbouwkundig Onderzoek, afdeling Bosexploitatie, Generaal Foulkesweg 64, Wageningen, Netherlands. WIBw

WAGENINGEN: Laboratorium voor Plantkunde, Arboretumlaan 4, Wageningen, Netherlands. WLw

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WHAKAREWAREWA: Forest Research Institute, P. B. Whakarewarewa, Rotorua, New Zealand. WZw

ZAGREB: Wood Structure Section, Forestry-Agriculture Faculty, University of Zagreb, Post Box 95, Zagreb-Maksimir, Yugoslavia. ZAw

ZURICH: Institut für Allgemeine Botanik, Eidgenössische Technischen Hochschule, Laboratorium für Holzuntersuchung, Universitätsstrasse 2, Zürich, Switzerland. ZTw

REPORT OF THE COMMITTEE FOR SPERMATOPHYTA CONSERVATION OF GENERIC NAMES II

H. W. Rickett, Secretary (New York)

This report continues the previous one (Taxon **7**: 184-193. 12 Sep 1958). Generic names proposed for conservation and referred to the committee for study are listed below, with the recommendations of the committee and a brief digest of the considerations that influenced the voting. As before, the votes for and against each proposal are shown (in that order) by figures separated by a dash; an affirmative vote of 6 was required for a recommendation to adopt a proposal.

402. Lepturus Trin. (1820) vs. *Lepturus* R. Br. (1810) (0-8) (Taxon **2**: 209. 1953).

The proposal seemed confused, seeking to displace *Lepturus* R. Br. [T.: *L. repens* (Forst.) R. Br.] and set up *Lepturus* Trin. partim. [T.: *L. incurvus* (L.) Druce], or alternatively to give the latter segregate a new name, *Lepidurus* ("nom. event."). The name *Parapholis* Hubbard (1946) is also typified by *L. incurvus*, and the abandonment of *Lepturus* R. Br. would not be conducive to nomenclatural stability.

(sub **410.**). **Hordelymus** (Jessen) Harz (1885) vs. *Cuviera* Koeler (1802) (0-8) (Taxon **2**: 209. 1953).

Cuviera Koeler is rejected in favour of 8357 *Cuviera* DC. (1807) (nom. cons.), and conservation of *Hordelymus* would therefore be superfluous.

2066. Stenocarpus R. Br. (1810) (Taxon **6**: 198. 1957).

The generic name is already conserved. The proposal was to rectify the authority for the type-species as listed in the *Code;* it should be *S. umbelliferus* (J. & G. Forster) Druce. Members of the committee agreed that this is a matter of fact rather than of opinion and calls for no vote. The editorial committee is invited to make the necessary correction in the next edition of the *Code.*

(sub **2201.**) **Tiniaria** Reichenb. (1837) vs. *Reynoutria* Houttuyn (1777) and *Bilderdykia* Dumort. (1827) (0-8) (Taxon **2**: 209. 1953).

The argument for the proposal dealt with the wholly irrelevant question of the taxonomic division of *Polygonum.* Whether the three names cited above are in fact one genus, or (as cytological research indicates) there are two is taxonomy not nomenclature. No valid reason has been advanced for conservation of *Tiniaria* over the older names. Moreover, Reichenbach's diagnosis of *Tiniaria* is inadequate and not in accord with his key.

2428. Anredera Juss. (1789) vs. *Fallopia* Adans. (1763) (4-4) (Taxon **5**: 198. 1956).

The action of the committee was based on a misunderstanding. Since these notes were drafted, it has been called to my attention that examination of the actual type of *Anredera* (Sloane's specimen in BM) has shown that it is *not Polygonum scandens* L. as stated in the proposal. The genus is therefore not identical with *Fallopia;* the names are not even taxonomic synonyms. *Anredera* therefore stands without conservation, so far as *Fallopia* is concerned.

(sub **2429.**) **Krascheninikovia** Turcz. (1834) vs. *Krascheninnikovia* Gueldenst. (1772) (1-7) (Taxon **3**: 197. 1954).

This proposal by Russian botanists was distributed at the Paris Congress (1954). Conservation was said to be desirable because the generic name "immortalizes the memory of Stephan Krascheninnikov," and the earlier homonym has not been used (= *Eurotia* Adans.). The original publication by Turczaninow was not seen. In Besser's version the name is a nomen nudum. Apparently all necessary transfers to *Pseudostellaria* Pax (1934) have been made and are in use.

(sub **2731.**) **Himantandra** Diels (1912) vs. *Galbulimina* Bailey (1894) (4-4) (Taxon **5**: 198. 1956).

It was shown that the earlier publication by F. von Mueller of *Himantandra* (1890) was not valid, since it did not fulfil the requirements (Art. 41) for a descriptio generico-specifica. The genus is small (4 species) and restricted in range. Although in recent works *Himantandra* has been universally used, all necessary combinations have been made with *Galbulimina.*

2968. Ricotia L. (1764) vs. *Scopolia* Adans. (1763) (6-2) (Repert. Sp. Nov. **52**: 146, 153. 1943).

This proposal was considered by the 1950-54 committee, and rejected by a vote of 4 in favour, 3 against, 2 against as unnecessary, with 1 abstention. Since *Scopolia* Adans. is rejected in favour of 7393 *Scopolia* Jacq. (nom. cons.) and is hence unavailable, some members of the preceding committee voted to reject the proposal as unnecessary, overlooking that *Ricotia* L. was superfluous when published (being based on the same type as *Scopolia* Adans.) and therefore illegitimate. Rejection of *Scopolia* Adans. does not in itself render *Ricotia* L. legitimate. No other name for this small genus seems to be available.

3657. Lotononis (DC.) Eckl. & Zeyh. (1836) vs. *Amphinomia* DC. (1825) and *Leobordea* Del. (1830 vel 1833) (8-0) (Repert. Sp. Nov. **52**: 147, 154. 1943; Taxon **6**: 233. 1957).

A. decumbens was suspected by Bentham of being conspecific with *L. polycephalus;* recent study shows this to be untrue and removes apparently the only basis for considering *Amphinomia* a synonym of *Lotononis;* its affinities are still uncertain. *Lotononis* has been widely used and conservation would remove any doubt of its legitimacy. *Leobordea* has not been used as a substitute for *Lotononis* (ca. 130 spp.), only for a distinct genus; and, if conservation of the latter were not effected, this name also would be rendered a cause of instability by the uncertainty about *Amphinomia.*

4190. Guarea Allem. (1771) vs. *Samyda* L. (1753) (4-4) (Taxon **5**: 194).

Guarea is already conserved over *Elutheria* P. Br. (1756). The present proposal is to add *Samyda* L. to the nomina rejicienda. This was found by the committee to be unnecessary since (1) *Samyda* L. will probably be unavailable because of the recommended conservation of *Samyda* Jack. (1760) (see Taxon **7**: 191. 1958); and (2) *Samyda* L. is a nomenclatural synonym of *Guarea* (based on the same type) and hence to be rejected automatically under Art. 14 Note 3.

4626. Maytenus HBK (1824-5) vs. *Maytenus* Molina (1782) and *Haenkea* Ruiz & Pavon (1794) (0-8) (Taxon **3**: 196. 1954).

The two publications of *Maytenus* apply to the same taxon; a conservation was proposed because the original description by Molina contained errors. The proposer stated that HBK were the first to describe the flowers correctly; but Bosc in 1803 had done this. In any case, there is no doubt of the identity of Molina's genus, and an erroneous generic description is in itself no sufficient reason for conservation of a later publication. The genus may be ascribed to Molina as emended by Bosc, without legislation. *Haenkea* Ruiz & Pavon is then a later synonym.

5150. Schima Reinw. (1825) vs. *Schima* Reinw. (1823) (3-5) (Taxon **2**: 115. 1953).

Both publications of *Schima* apply to the same taxon; the problem is the questionable validity of the publication of the earlier *Schima.* This mentioned 2 spp. of which only one was described; the description of this species (there was no generic description) has therefore been maintained as a combined generic and specific description under Art. 41. But since the genus was doubtfully monotypic, and since the application of the name changed with the second publication, there was a question whether or not this second publication would stand without conservation. If the 1823 name did not apply to a monotypic genus, then the 1825 name would stand without conservation; if the 1823 name was validly published, then the 1825 name was a later homonym and could be maintained only by conservation. This was considered by the 1950-54 committee; 3 voted in favour of conservation, 2 against, 4 held it unnecessary, 2 abstained. Because of this indecisive result, the proposal was referred to the present committee. A majority of the members decided that the 1823 publication was invalid and the 1825 name could stand without conservation. (It is interesting that the vote was almost the same as that of those who voted before).

5278. Erythrospermum Lam. (1792) vs. *Pectinea* Gaertn. (1791) (7-1) (Taxon **5**: 197. 1956).

Although this is a small genus (6 commonly accepted spp.), it ranges from Madagascar through Ceylon and Malay to Fiji. Some 48 binomials have been made with *Erythrospermum;* only one with *Pectinea,* which has scarcely been used.

5943. Molopospermum Koch (1829) vs. *Cicutaria* Agosti (1770) (0-8) (Taxon **2**: 210. 1953).

The reader is referred to Taxon **7**: 187 (1958), where the status of Agosti's work is clarified (under **1048 Gagea**). Agosti's names were not validly published and conservation of *Molopospermum* is therefore unnecessary.

6208. Pernettya Gaud. (1825) ('*Pernettia*') vs. *Pernet(t)ya* Scop. (1777) (8-0) (Kew Bull. **1939**: 327. 1939).

The proposal was rejected by the 1950-54 committee. Subsequent correspondence indicated that the committee did not have all relevant facts, and the proposal was referred to the present committee for additional study and a new vote.

Both names commemorate the same person, despite the orthographic variation. Gaudichaud himself changed the spelling of his name in 1826. Scopoli has *Pernettya* in the index. There is therefore no doubt that the two names are homonyms. *Pernettya* Scop. was superfluous when published as a substitute for *Canaria* L., and therefore illegitimate, but it still renders *Pernettya* Gaud. a later homonym, not to be maintained without conservation. The desirability of maintaining *Pernettya* Gaud. needs no exposition.

6212. Arctostaphylos Adans. (1763) vs. *Uva-ursi* Duhamel (1755) (8-0) (Taxon **2**: 210. 1953).

Uva-ursi Duhamel was shown to be validly published and not superfluous (his citation of "Arbutus, Linn." meant that he was dividing Linnaeus' genus, not that *Uva-ursi* was a new name for it). There is, of course, no doubt of the desirability of maintaining *Arctostaphylos.*

6361. Manilkara Adans. (1763) vs. *Achras* Loefl. (1758). (6-2) (Taxon **2**: 112. 1953).

These names are now generally considered taxonomic synonyms. To use *Achras* for the combined genus would entail about 65 new combinations, including the names of many well-known species of economic importance. To use *Manilkara* means an unfamiliar name for the sapodilla: the lesser inconvenience.

(sub **6368.**) **Planchonella** Pierre (1890) vs. *Hormogyne* A. DC (1844) (7-1) (Taxon **2**: 112. 1953).

Usage is overwhelmingly in favour of maintaining *Planchonella* for this large genus (ca. 100 spp.) of southeastern Asia and the Pacific. *Hormogyne* has been used for only one species.

6729. Chlorocodon Hook. f. (1871) vs. *Chlorocodon* Fourreau (1869) (4-4) (Taxon **3**: 67. 1954).

Chlorocodon Hook. f. contains 2 species of tropical and subtropical Africa. A substitute name, *Mondia* Skeels (1911), has been given to it, but has not been much used. *Chlorocodon* Fourreau has scarcely ever been accorded generic status by later workers. Some members of the committee were influenced by the small size and unimportance of *Chlorocodon* Hook. f. Others were more impressed by the lack of use of the earlier homonym and the convenience of conservation to students of African botany.

7096. Nonnea Medik. corr. Reichenb. (1831) vs. *Echioides* Agosti (1770) (0-8) Taxon **2**: 210. 1953).

See the comment under *Molopospermum* above.

7250. Dracocephalum L. (1753) (Taxon **3**: 66. 1954) (7-1).

As originally formulated, the proposal was to conserve "*Dracocephalum* L. emend. Benth." over "*Dracocephalum* L. emend. Adans." Such a form of citation is contrary to Art. 48. In effect the proposal seeks to conserve Bentham's type over Adanson's earlier choice. The committee endorses the proposal, the change in form being purely technical.

Dracocephalum L. included species now generally placed in two genera. Bentham's typification of Linnaeus' name (*D. moldavica*) permits the use of the name for the larger taxon (ca. 90 spp.), mainly Asiatic, now generally known by that name. Adanson's typification (by reference to Tournefort, *D. virginianum*), would apply *Dracocephalum* to the smaller genus and necessitate making many new combinations in *Moldavica* Adans., which would be the correct name of the larger genus. *D. virginianum* has been commonly called *Physostegia virginiana;* no new combinations are necessary if conservation of *Dracocephalum* as typified by Bentham is effected.

It would seem, however, that if this conservation is authorized, *Moldavica* Adans. must also, by further action, be rejected.

7584. Wulfenia Jacq. (1781) vs. *Wulfenia* Agosti (1770) (0-8) (Taxon **2**: 211).

See the comment under *Molopospermum* above.

7662. Arrabidaea DC (Sep 1838) vs. *Pentelesia* Raf. (Oct 1838) (Taxon **4**: 43, 70).

The proposal was withdrawn by the proposer when it became clear that *Arrabidaea* was in fact prior. The name is inserted here to complete the record. No action is recommended.

7665. Anemopaegma Mart. (1840) vs. *Cupulissa* Raf. (1837) and *Platolaria* Raf. (1838) (7-1) (Taxon **4**: 43. 1955).

There are about 60 binomials with *Anemopaegma,* while Rafinesque's earlier names have never been used. The types of the latter have only recently been identified, and this makes conservation necessary for the maintenance of the accepted name.

7669. Phaedranthus Miers (1863) vs. *Serera* Raf. (1838) (6-2) (Taxon **4**: 43. 1955).

Although the genus is monotypic, the general usage of the name *Phaedranthus* in both botanical and horticultural works makes conservation desirable. Rafinesque's name is wholly obsolete, besides being typified by a misidentification and an illegitimate binomial.

8561. Wilbrandia Silva Manso (1836) vs. *Wilbrandia* Presl (1828) (0-8) (Taxon **3**: 133. 1954).

Conservation of *Wilbrandia* Silva Manso was found to be unnecessary since *Wilbrandia* Presl was a nomen provisorium and hence not validly published: it has no status in nomenclature.

SUMMARY

The following generic names are recommended for conservation as proposed: 2968 *Ricotia* L.; 3657 *Lotononis* (DC) Eckl. & Zeyh.; 5278 *Erythrospermum* Lam.; 6208 *Pernettya* Gaud.; 6212 *Arctostaphylos* Adans.; 6361 *Manilkara* Adans.; sub 6368 *Planchonella* Pierre; 7665 *Anemopaegma* Mart.; 7669 *Phaedranthus* Miers.

The committee recommends the conservation of 7250 *Dracocephalum* L. with the type *D. moldavica* L.

The committee is opposed to the conservation of the following names and recommends that the proposals be rejected: 402 *Lepturus* Trin.; sub 2201 *Tiniaria* Reichenb.; sub 2429 *Krascheninikovia* Turcz.; sub 2731 *Himantandra* Diels; 4626 *Maytenus* HBK; 6729 *Chlorocodon* Hook. f.

The committee finds conservation of the following names unnecessary and recommends rejection of the proposals: sub 410 *Hordelymus* (Jessen) Harz; 2428 *Anredera* Juss.; 5159 *Schima* Reinw. 1825; 5943 *Molopospermum* Koch; 7096 *Nonnea* Medik.; 7584 *Wulfenia* Jacq.; 8561 *Wilbrandia* Silva Manso.

The proposal to add, under 4190 *Guarea* (nom. cons.) *Samyda* L. to the list of nom. rej. was found unnecessary; it may, however, be added automatically.

The committee noticed and verified the change of authority of the name of the type-species of 2066 *Stenocarpus* (nom. cons.) (this being a matter of fact and needing no action).

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REMARKS ON ALGAL NOMENCLATURE. III.

Paul C. Silva (Urbana, Illinois)*

XII. *Flagellates.*

Eight generic names of flagellates were proposed for conservation by Senn (in Briquet, Rec. Syn. Ve Congr. Int. Bot. 128. 1930), but these proposals have not been acted upon by any Congress. They are herein reviewed, together with certain other problematical generic names.

(64) *Nomen conservandum propositum:* **Phacus** Dujardin, Hist. Nat. Zooph. 334. 1841. Euglenaceae (Euglenophyta). Species lectotypica: *P. longicauda* (Ehrenb.) Dujardin (*Euglena longicauda* Ehrenberg, Abh. K. Akad. Wiss. Berlin, Phys. Kl. 1830: 83. 1830; *ibid.* 1831: 72, pl. I, fig. VI. 1832; Infusionsthierchen 111, pl. VII, fig. XIII. 1838).

Nomen rejiciendum propositum: Phacus Nitzsch in Ersch et Gruber, Allg. Encycl. Wiss. Künste, sect. 1. 16: 69. 1827. Species lectotypica: *Cercaria pleuronectes* O. F. Mueller.

The genus *Cercaria* was established by O. F. Mueller (1773, p. 64) on the basis of eight species, namely, *C. gyrinus, C. catellus, C. podura, C. lupus, C. lemna, C. cyclidium, C. tenax,* and *C. pleuronectes.* Mueller later (1776, 1786) added fourteen species, including *C. discus, C. tripos, C. turbo,* and *C. viridis.* The first attempt to divide the species of *Cercaria* among several smaller genera was made by Nitzsch. In a footnote on page 4 of his paper, "Beitrag zur Infusorienkunde oder Naturbeschreibung der Zerkarien und Bazillarien," published in Neue Schriften der naturforschenden Gesellschaft zu Halle, Dritter Band, Heft I, 1817**), Nitzsch proposed the recognition of twelve genera, mentioning included species but failing to give names or diagnoses for new genera. In 1823 Bory de Saint-Vincent (pp. 355, 356) named and characterized six genera, which he grouped into the new family Cercariées. These genera were treated individually and assigned species in various articles in the Dictionnaire Classique and in the Encyclopédie Méthodique during the years 1823 and 1824. In 1827 (in the article entitled "Cercaria" in Ersch and Gruber's encyclopedia) Nitzsch validated his previously suggested taxonomic treatment with names and diagnoses. Thus originated two partially competitive systems. Bory's *Tripos* (1823, p. 356; 1824, pp. 526, 753) was based on *Cercaria tripos* Mueller, which had previously (and correctly) been assigned to *Ceratium* Schrank (1793) by Nitzsch (1816). Bory's *Turbinilla* (1823, p. 356; 1824, pp. 525, 760, '*Turbinella*') was based on *Cercaria turbo* Mueller, which is also the type of *Urocentrum* Nitzsch (1827), currently recognized as a genus of holotrichous ciliates. To his genus *Virgulina,* Bory (1823, p. 356) first assigned (1824, p. 526) *Cercaria pleuronectes* Mueller and *C. cyclidium* Mueller, later (1824, p. 781) adding *C. discus* Mueller and *C. tenax* Mueller. Nitzsch (1827) referred *C. cyclidium* and *C. discus* to the genus *Cyclidium* Mueller (1773) and established the genus *Phacus* on the basis of *C. pleuronectes* and *C. tenax.* Thus *Phacus* is an illegitimate name inasmuch as it was superfluous at the time it was proposed, Nitzsch being obliged to retain *Virgulina* in some circumscription. While there is undoubtedly strong sentiment for conserving the name *Phacus,* there are certain technical difficulties which should be carefully considered. In determining the type of *Phacus,* we should note that of the two original species, *Cercaria tenax* is believed by Dobell (1939) to be referable to *Trichomonas* Donné (1836). The identity of *Cercaria pleuronectes* seems to be much in doubt. The description "... albida ... Mortua complanata virentem colorem induit" is puzzling and suggests that if Mueller really had *Phacus* in hand, it was a hyaline form. The taxonomic disposition of these colorless forms of *Phacus,* many of which have the general cell form of *P. pleuronectes,* varies. In the boldest treatment, Pringsheim (1936, p. 58) refers them to a separate genus, *Hyalophycus.* Ehrenberg (1838) doubted that either Mueller, Bory, or Nitzsch had in hand what he called *Euglena pleuronectes* (and what today perhaps most taxonomists consider to be *P. pleuronectes*). Ehrenberg did not recognize *Phacus,* however, and the first worker after Nitzsch to employ the name was Dujardin (1841), who expressed no doubt that his

*) I am grateful to Professor G. F. Papenfuss for critically reading this manuscript.

**) In a footnote on page 67 of volume 16 of the first section of Ersch and Gruber, Allgemeine Encyclopädie der Wissenschaften und Künste, Nitzsch states that this paper appeared in 1816, despite the 1817 date on the title page.

material (obviously *Phacus*, to judge from his figures) was at least in part the same species as Mueller's and Nitzsch's *Cercaria pleuronectes* and Bory's *Virgulina pleuronectes*. Thus, while it seems safer to propose *Phacus* for conservation as of Dujardin rather than as of Nitzsch, there is still the question of the type. Inasmuch as Dujardin cited *Cercaria pleuronectes* Mueller as a synonym of *Phacus pleuronectes*, retention of this historically correct type would argue for conservation of *Phacus* as of Nitzsch. A solution to the dilemma, which I hereby propose, would be to select as the type of the conserved genus *P. longicauda* (Ehrenb.) Dujardin (*Euglena longicauda* Ehrenberg), whose identity as a species of *Phacus* is beyond reasonable doubt. It should be noted that *Phacus* is almost always attributed to Dujardin, even though Dujardin himself attributed it to Nitzsch.

Phacus is a large genus (at least 150 species) abundantly distributed throughout the world. The firm establishment of this name in literature gives strong support to conservation. Arguments against conservation, in addition to opposition to legislating exceptions to the rule of priority, might include unwillingness to conserve a name with altered circumscription and type.

Euglena (Euglenaceae, Euglenophyta). This genus was established by Ehrenberg (1830a, p. 508) to accommodate those euglenoid organisms that have eyespots. Five species were originally assigned to *Euglena*, namely, *Cercaria viridis* Mueller, *C. pleuronectes* Mueller, *Vibrio acus* Mueller, *Euglena spirogyra* Ehrenb. (*nomen nudum*), and *E. sanguinea* Ehrenb. (*nomen nudum*, non *E. sanguinea* (Nees et Goldf.) Ehrenb.). Dujardin (1841, pp. 349, 358) lectotypified *Euglena* with *Cercaria viridis*.

Other generic names to be considered in connection with *Euglena* include *Haematococcus* C. Ag., *Amblyophis* Ehrenb., *Lacrimatoria* Bory, *Furcocerca* Lamarck, and *Raphanella* Bory.

Haematococcus C. Agardh (Icon. Alg. Eur. no. XXII. 1828) originally comprised three species: *H. noltii* C. Ag., usually considered representative of *Euglena; H. grevillii* C. Ag., of controversial identity; and *H. sanguinea* (C. Ag.) C. Ag. (*Palmella sanguinea* C. Ag.), usually referred to *Gloeocapsa* Kuetzing 1843. Wille (Nyt Mag. Naturv. 41: 97. 1903), in accordance with the principle of residue, regarded as lectotype *H. grevillii*, which he considered conspecific with *H. pluvialis* Flotow. This lectotypification overlooks an earlier one by Trevisan (Alg. Coccot. 38. 1848), who selected *H. noltii*. *Euglena* is thus seen to be in need of conservation; but if Droop's proposal (Rev. Alg. n.s. 2: 182-192. 1956) for the conservation of *Haematococcus* Flotow 1844 vs. *Haematococcus* C. Agardh 1828 is accepted, *Euglena* will remain the correct name for its genus. *)

Amblyophis was established by Ehrenberg (1832, p. 73) to accommodate those euglenoid organisms with an eyespot but without a tail. The single species, *A. viridis*, was referred to *Euglena* by Klebs in 1883 (as *E. ehrenbergii*, the binomial *E. viridis* being preoccupied).

Lacrimatoria Bory (1824, p. 479; 1826, p. 158, '*Lacrymatoria*') originally comprised six species of diverse relationships, including *Vibrio acus* Mueller, which was referred to *Euglena* by Ehrenberg in his original treatment of that genus. Ehrenberg (1830b, p. 42) changed the spelling to *Lacrymaria*, later (1838, p. 309) commenting that this name was "sprachlich vorzuziehende." Previously (1832, p. 105) he had indirectly lectotypified the genus by retaining in it only *Vibrio olor* Mueller (a ciliate) of the six original species. In 1834 (p. 316) he established the genus *Trachelocerca* to encompass three species, including *Vibrio olor*. Protozoologists currently refer this species to either *Lacrymaria* or *Trachelocerca*, both of which names would be illegitimate in accordance with the Botanical Code. It is sufficient for our purpose, however, to note that *Lacrymatoria* applies to a genus of ciliates rather than to euglenids.

Furcocerca Lamarck (1815, p. 446) originally comprised eight species, including *Cercaria viridis* Mueller. It was emended with the exclusion of *C. viridis* by Bory in 1824 (p. 424), who (1824, p. 665) included this species together with six other species of diverse relationships in his new genus *Rapha-*

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*) On the basis of the inclusion of *Cercaria pleuronectes* Mueller in the original treatment of *Euglena*, it could be contended that this generic name, like *Phacus*, is a superfluous substitute for *Virgulina*. However, Ehrenberg's (1838, p. 111) expression of doubt as to the identity of both *Virgulina pleuronectes* Bory and *Phacus pleuronectes* Nitzsch (as distinguished from *Cercaria pleuronectes* Mueller) would seem to weaken, if not nullify, this argument.

nella. Cercaria viridis was soon afterward removed to *Euglena* by Ehrenberg (1830a, p. 508). Neither *Furcocerca* nor *Raphanella* appears in recent protozoological literature; for our purpose, however, it is sufficient to note that with the removal of *Cercaria viridis* to *Euglena* these generic names remain to apply to presumably non-algal organisms, probably ciliates.

(65) *Nomen conservandum propositum:* **Lepocinclis** Perty, Mitt. Naturf. Ges. Bern 1849: 28, adnot. 1849. Euglenaceae (Euglenophyta). Species lectotypica: *L. globulus* Perty, loc. cit.

Nomen rejiciendum propositum: Crumenula Dujardin, Ann. Sc. Nat. Zool. ser. 2. 5: 204 ('*Crumenule*'); 205, explanation to plate ('*Crumenula*'). Species typica: *C. texta* Dujardin, Hist. Nat. Zooph. 339, pl. V, fig. 8. 1841.

This proposal was made by Senn. There is considerable doubt, however, that the two names apply to the same genus. Skuja (1948, p. 193) gives several reasons for considering *Crumenula texta* a species of *Euglena,* but one which approaches *Lepocinclis.* This opinion is shared by Pringsheim (1956, p. 139), although not by Gojdics (1953, p. 187). Even if the two names were considered to apply to the same genus, *Lepocinclis* would not be universally accepted as its name. Cunha (1914, p. 170), Deflandre (1928, p. 138), and others have chosen to use *Crumenula* rather than *Lepocinclis.* Thus conservation would appear to be inadvisable.

(66) *Nomen conservandum propositum:* **Astasia** Dujardin, Hist. Nat. Zooph. 356. 1841. Astasiaceae (Euglenophyta). Species lectotypica: *A. limpida* Dujardin, op cit. 357, pl. V, fig. 12.

Nomen rejiciendum propositum: Astasia Ehrenberg, Annalen der Physik 94: 508. 1830. Species lectotypica: *A. haematodes* Ehrenberg.

Astasia was established by Ehrenberg to include those euglenoid organisms that lack an eyespot. Three species were originally assigned to the genus, namely, *A. haematodes* Ehrenb., *Enchelys sanguinea* Nees et Goldfuss, and *Volvox lacustris* Girod Chantrans (the latter with a query). Ehrenberg (1838, pp. 101, 105) lectotypified *Astasia* with *A. haematodes* by removing the other two species to the synonymy of *Euglena sanguinea* (Nees et Goldf.) Ehrenb. But *A. haematodes* is also referable to *Euglena.* The first circumscription to include the character of apochlorosis was that of Dujardin, and it should be noted that *Astasia* is often ascribed to that author.

Astasia would seem to meet the requirements of Article 14 for conservation. It is a moderately large genus (at least 30 species) and is widespread. It is the type of a currently accepted family. Arguments against conservation, in addition to reluctance to legislating exceptions to the rule of priority, might include unwillingness to conserve a name with altered circumscription and type.

(67) *Nomen conservandum propositum:* **Anisonema** Dujardin, Hist. Nat. Zooph. 344. 1841. Peranemataceae (Euglenophyta). Species lectotypica: *A. acinus* Dujardin, op. cit. 345, pl. 4, fig. 27.

Nomen rejiciendum propositum: Anisonema A. Jussieu, Euphorb. 19. 1824. Euphorbiaceae (Spermatophyta). Species holotypica: *A. reticulatum* (Poiret) A. Jussieu (*Phyllanthus reticulatus* Poiret).

Dujardin originally included two species in *Anisonema, A. acinus* and *A. sulcata* Dujardin (op. cit. 344, pl. 4, fig. 28). He indicated that the latter species should probably constitute a distinct genus, and Stein (1878, pl. XXIV, figs. 17-25) established *Entosiphon* to accommodate it, thus lectotypifying *Anisonema* with *A. acinus.*

The earlier homonym for the past century has been considered a taxonomic synonym of *Phyllanthus* Linnaeus (1753).

Anisonema Duj. is a widespread genus of about eighteen species. Throughout its long history it has gone solely under its present name. Arguments against conservation, in addition to the undesirability of legislating exceptions to the rule of priority, might include unwillingness to preclude the possible future use of this name in the Euphorbiaceae. *Metanema* (Klebs) Senn (1900, p. 184) is a taxonomic synonym of *Anisonema* Duj.

Dinematomonas nom. nov. *Dinema* Perty, Kenntn. Kleinst. Lebensf. 169. 1852. Peranemataceae (Euglenophyta). Non *Dinema* Lindley, Orch. Scel. 16. 1826. Orchidaceae (Spermatophyta). Lectotype species: **Dinematomonas griseola** (Perty) comb. nov. (*Dinema griseolum* Perty, loc. cit.). Other species: **Dinematomonas litoralis** (Skuja) comb. nov. (*Dinema litorale* Skuja, Acta Horti Bot. Univ. Latv. 11/12: 145. 1939).

The holotype of *Dinema* Lindley, *Epidendrum polybulbon* Swartz, is usually retained in *Epidendrum* Linnaeus (1753). *Dinema* is

also preoccupied in the animal kingdom by a genus of Coleoptera (*Dinema* Fairmaire, Rev. Mag. Zool. ser. 2. 1: 457. 1849).

Dinema Perty seems too small and not sufficiently widespread in literature to warrant conservation.

(68) *Nomen conservandum propositum:* **Notosolenus** A. C. Stokes, Am. Journ. Sc. 128(164): 158. Aug. 1884. Peranemataceae (Euglenophyta). Species typica: *N. apocamptus* (Stokes) Stokes (*Solenotus apocamptus* Stokes).

Nomen rejiciendum propositum: Solenotus A. C. Stokes, Am. Journ. Sc. 128(163): 48. July 1884. Species typica: *S. apocamptus* Stokes, loc. cit. (type indicated by author).

Immediately after establishing the genus *Solenotus,* Stokes realized that this name was preoccupied (in the animal kingdom) and substituted the name *Notosolenus.* According to the Botanical Code, the correct name is *Solenotus.* However, inasmuch as this widespread genus of about thirteen species has exclusively gone under the name *Notosolenus* for 74 years and has been treated in numerous monographs and texts, it would seem appropriate to conserve this name. The proposal was made by Senn. Arguments against conservation would include the undesirability of legislating exceptions to the rule of priority.

Peranema (Peranemataceae, Euglenophyta). This genus was originally named Pyronème by Dujardin (1836, p. 203), but the question whether this should be considered valid publication in view of the French form of the name is obviated by the existence of an earlier *Pyronema,* applied to a genus of fungi by Carus in 1835. Dujardin (1841, p. 353) changed the name to *Peranema* for etymological reasons, but this name had been applied previously by Don (1825, p. 12) to a genus of ferns which is still considered autonomous. Conservation thus being precluded, an awkward situation arises in that protozoologists will continue to apply the name *Peranema* to this small, though widespread and well-known, genus, while phycologists must seek another name. In searching for legitimate synonyms, *Peranemopsis* comes into consideration. This genus was established by Lackey (1940, p. 467) to receive a *Peranema*-like marine organism, but one with only one flagellum and one pharyngeal rod. Skuja (1948, p. 231) believes that the species which is usually considered to be the type of *Peranema, P. trichophorum* (Ehrenb.) Stein, may normally have only one flagellum, despite several reports to the contrary by other investigators. Skuja therefore reduces *Peranemopsis* to the synonymy of *Peranema.* Any decision regarding the correct name of this genus obviously must await further taxonomic study.

Petalomonas (Peranemataceae, Euglenophyta). This genus was established by Stein (1859, p. 76, adnot.) on the basis of *Cyclidium abscissum* Dujardin. Conservation of *Petalomonas* against "*Cyclidium* Dujardin" has been proposed by Senn, but this proposal is groundless inasmuch as *Cyclidium* was founded by O. F. Mueller (1773) and as used by Dujardin was accredited to that author. It is the accepted name for a genus of holotrichous ciliates.

Monas (Monadaceae, Ochromonadales, Chrysophyceae). This genus as attributed to "Ehrenberg emend. Stein" (1878) was proposed for conservation against *Spumella* Cienkowsky (1870, p. 432) by Senn. *Monas* was established by O. F. Mueller (1773, p. 25) and originally included three species, namely, *M. termo, M. lens,* and *M. mica.* The first two species are considered by some workers to be conspecific with the organisms now usually known as *Oikomonas termo* (Oikomonadaceae) and *Bodo lens* (Bodonaceae), respectively. Kent (1880) removed these two species from *Monas* (to *Oikomonas* and *Heteromita,* respectively), thereby lectotypifying the genus with *M. mica.* The identity of this species is problematical. Ehrenberg in various publications added 24 species to *Monas,* including two, *M. guttula* and *M. vivipara,* which Stein (1878, pl. I, Abt. VI; pl. II, Abt. I) illustrated to the exclusion of all other species of the genus. Stein's treatment was considered an emendation by Senn (1900, p. 131), who attributed the genus directly to Stein. It was this circumscription that Senn had in mind when he proposed *Monas* for conservation against *Spumella,* whose type species, *S. vulgaris,* is usually considered congeneric with *Monas vivipara.* Upon these two species Pascher (1912, p. 190) established the genus *Heterochromonas,* which he considered a colorless counterpart of *Ochromonas.* Bourrelly (1957, p. 142) designated *H. vivipara* as lectotype.

Considering the facts that the identity of *Monas mica,* the lectotype of its genus as originally established, is not known and that the name *Monas* has been applied to a diverse

array of organisms, there seems little if any justification for conserving it, regardless of the circumscription selected for conservation. There also seems little justification for retaining the name *Heterochromonas* in view of the availability of *Spumella*. Bourrelly restricts the genus to those organisms which reveal their relationship to *Ochromonas* by the formation of endogenous cysts, among other criteria. This circumscription includes three species: *Spumella vulgaris* Cienk., *S. vivipara* (Ehrenb.) Kent, and **S. beauchampii** (Hovasse) comb. nov. (*Oicomonas beauchampi* Hovasse, Arch. Zool. Expér. Génér. 83 (Notes et Revue): 47. 1943).

Oikomonas (Oikomonadaceae, Protomastigineae). This genus was established by Kent (1880, p. 250) to receive six species of uniflagellate *Monas*-like organisms, of which *O. mutabilis* Kent was designated the type. It is retained in current protozoological literature largely on the basis of *O. termo* (O. F. Mueller) Clark, one of the original species. Senn proposed the conservation of *Oikomonas* (as *Oicomonas*) against *Cercomonas* Dujardin (1841, p. 287) *pro parte*, but this proposal is groundless inasmuch as *Cercomonas* is accepted by many workers as the name of a genus of biflagellate organisms in the Bodonaceae (Protomastigineae) which includes at least two of the original Dujardin species (*C. crassicauda* and *C. longicauda*). Some authors refer these two species to *Cercobodo* Krassilstschik (1886). Certain species referred to *Oikomonas* by authors other than Kent are now generally believed to be colorless counterparts of *Chromulina* Cienkowsky (1870), and for these species Pascher (1912, p. 190) erected the genus *Heterochromulina* (type: *Oikomonas ocellata* Scherffel), which Bourrelly (1957, p. 252) places in the Chromulinaceae. It is possible that one or more of the original species of *Oikomonas* may prove to lie within Pascher's circumscription of *Heterochromulina*.

Desmarella (Craspedomonadaceae, Protomastigineae). Senn proposed *Desmarella* Kent (1878a, p. 130, pl. III, fig. 23; 1878b, p. 147, pl. VII, fig. 9) for conservation against "? *Hirmidium* Perty" (1852, p. 178) and *Codonodesmus* Stein (1878, pl. IX, figs. 10-12). Elsewhere, Senn (1900, p. 126) admits that the identification of *Desmarella* with *Hirmidium* "ist zu hypothetisch", and inasmuch as Kent's papers appeared several months before Stein's work (April and August compared with November), there is no need for conservation.

Bodo (Bodonaceae, Protomastigineae). This genus as attributed to "Ehrenberg emend. Stein" (1878) was proposed for conservation against *Heteromita* Dujardin (1841, p. 297) by Senn. *Bodo* was described by Ehrenberg (1830b, p. 38) and assigned three species, namely, *B. didymus*, *B. viridis*, and *B. vorticellaris*, all *nomina nuda*. These were validated together with two additional species, *B. saltans* and *B. socialis*, in 1832 (p. 65). Dujardin (1841, p. 298, adnot.) did not adopt the genus inasmuch as he considered the various species of Ehrenberg to be poorly observed members of three of his new genera, *Amphimonas*, *Cercomonas*, and *Heteromita*. Stein (1878, pl. II) illustrated five species of *Bodo*, of which only *B. saltans* is an original Ehrenberg species. Stein's treatment was considered an emendation by Senn (1900, p. 134), who had this circumscription in mind when he proposed *Bodo* for conservation against *Heteromita*, *H. ovata* having been referred to *Bodo* by Stein. Senn might have cited *Amphimonas* Dujardin as a *nomen rejiciendum* equally well, inasmuch as *A. caudata* was also referred to *Bodo* by Stein. However, so long as *B. saltans* is retained in the genus, *Bodo* is attributable to Ehrenberg (1830) and therefore has priority over Dujardin's genera.

Diplomitella nom. nov. *Diplomita* Kent, Man. Infus. 1: 289. 1881. Amphimonadaceae (Protomastigineae). Non *Diplomita* Fromentel, Étud. Microz. 209. 1874. Peranemataceae? Type (and only) species: **Diplomitella socialis** (Kent) comb. nov. (*Bicosæca socialis* Kent, Monthly Micr. Journ. 6: 263. 1871).

Fromentel described under the name *Diplomita insignis* a biflagellate colorless monad which Bütschli (1884, p. 829) referred to *Anisonema* Dujardin (1841).

Megastoma (Distomataceae, Distomatineae). Senn proposed "*Megastoma* Grassi, Atti Soc. ital. Sc. nat. (1881) 167" for conservation against "*Cercomonas* Lambl, Prager Vierteljahrsschr. f. d. prakt. Heilkunde (1859) 51 *p[ro]p[arte]*" and "*Lamblia* Blanchard Zoologie médicale (1886)." The nomenclatural (as well as taxonomic) history of this group of intestinal parasites is complicated. One such organism was described by Grassi in 1879 from various species of mice and placed in its own genus *Dimorphus* (as *D. muris*). Awkwardly, Grassi first erected the subgenus

Dimorphus in the genus *Dicercomonas* (p. 446) and later (p. 448) considered it of generic rank. Because this generic name „potrebbe dar luogo ad un equivoco" and the epithet "è diventata insufficente," Grassi (1881a, 1881b, 1882) changed the binomial to *Megastoma entericum*. Bütschli (1884, p. 843, legend to pl. XLVI, fig. 3), believing that this organism was the same as one described in 1859 by Lambl (p. 51, pl. I, fig. 2 *z*) under the name *Cercomonas intestinalis*, made the combination *Megastoma intestinalis*. Blanchard (in Railliet 1886, p. 1004; Blanchard 1888), realizing that both *Dimorphus* and *Megastoma* were preoccupied (in the animal kingdom), changed the name to *Lamblia* (*L. intestinalis*). In the meanwhile, Künstler (1882) proposed a new genus of intestinal parasites, *Giardia* (*G. agilis*), which is now generally considered to be congeneric with *Lamblia*. A further consideration was introduced by Hartmann (1909, p. 302), who believes that *Lamblia* is the sexual phase of *Hexamita intestinalis* Dujardin (1841). In any case, Senn's proposal is technically incorrect: there is no such genus as "*Cercomonas Lambl*," Lambl correctly having attributed *Cercomonas* to Dujardin without excluding the original species; Blanchard proposed *Lamblia* not in his Traité de zoologie médicale, but rather in Railliet's Éléments de zoologie médicale et agricole; and, most important, *Dimorphus* does not have an earlier homonym among plants and thus this name, rather than *Lamblia*, which is an illegitimate substitute name in botanical nomenclature, should be cited as the *nomen rejiciendum* of *Megastoma*. However, the fact that *Megastoma* has all but disappeared from the literature of the past half century would disqualify it from consideration as a *nomen conservandum*.

Porotheca nom. nov. *Porella* Schiller, Arch. Protistenk. 61: 54. 1928. Prorocentraceae (Pyrrophyta). Non *Porella* Linnaeus, Sp. Pl. 2: 1106. 1753. Porellaceae (Hepaticae). Lectotype species: **Porotheca globulus** (Schiller) comb. nov. (*Porella globulus* Schiller, op. cit. 56). Other species: **Porotheca adriatica** (Schiller) comb. nov. (*Porella adriatica* Schiller, loc. cit.). **Porotheca asymmetrica** (Schiller) comb. nov. (*Porella asymmetrica* Schiller in Rabenhorst, Krypt.-Fl. 10(3[1]): 29. 1931). **Porotheca bisimpressa** (Schiller) comb. nov. (*Exuviella bisimpressa* Schiller, Arch. Protistenk. 38: 258. 1918). **Porotheca perforata** (Gran) comb. nov. (*Exuviaella perforata* Gran, Cons. Perm. Int. Explor. Mer, Bull. Plankt. 1912: 99. 1915).

Erythropsidinium nom. nov. *Erythropsis* Hertwig, Morph. Jahrb. 10: 204. 1884. Warnowiaceae (Pyrrophyta). Non *Erythropsis* Lindley, Quart. Journ. Sc. Lit. Art, ser. 2. 2: 111. 1827. Sterculiaceae (Spermatophyta). Type species: **Erythropsidinium agile** (Hertwig) comb. nov. (*Erythropsis agilis* Hertwig, loc. cit.). Other species: **Erythropsidinium cochlea** (Schuett) comb. nov. (*Pouchetia cochlea* Schuett, Ergebnisse der Plankton-Expedition der Humboldt-Stiftung IV (M.a.A.): 169, pl. 26, fig. 95. 1895). **Erythropsidinium cornutum** (Schuett) comb. nov. (*Pouchetia cornuta* Schuett, op. cit. 169, pl. 26, fig. 96). **Erythropsidinium extrudens** (Kofoid et Swezy) comb. nov. (*Erythropsis extrudens* Kofoid et Swezy, Mem. Univ. Calif. 5: 494. 1921). **Erythropsidinium hispidum** (Kofoid et Swezy) comb. nov. (*Erythropsis hispida* Kofoid et Swezy, op. cit. 499). **Erythropsidinium labrum** (Kofoid et Swezy) comb. nov. (*Erythropsis labrum* Kofoid et Swezy, op. cit. 501). **Erythropsidinium minor** (Kofoid et Swezy) comb. nov. (*Erythropsis minor* Kofoid et Swezy, op. cit. 503). **Erythropsidinium pavillardii** (Kofoid et Swezy) comb. nov. (*Erythropsis pavillardi* Kofoid et Swezy, op. cit. 505). **Erythropsidinium richardii** (Kofoid et Swezy) comb. nov. (*Erythropsis richardi* Kofoid et Swezy, op. cit. 508).

Erythropsidinium scarlatinum (Kofoid et Swezy) comb. nov. (*Erythropsis scarlatina* Kofoid et Swezy, op. cit. 510).

Erythropsis Lindley is a currently accepted genus of flowering plants.

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THE STATUS OF AGYNEIA AND GLOCHIDION (EUPHORBIACEAE)*

Grady L. Webster (Lafayette, Ind.)

In their extensive revisions of the family Euphorbiaceae in the 'Pflanzenreich', Pax and Hoffmann treated most of the genera except those in the *Phyllanthus*-complex. For *Phyllanthus* and its allies, which include at least 1,000 species, no general revision has been made since that of Mueller Argoviensis in De Candolle's 'Prodromus' (1866). A survey of the taxa in the subtribe Phyllanthinae (s. lat.), made in connection with a revision of the West Indian species of *Phyllanthus* (Jour. Arnold Arb., 1956-58), has shown that extensive taxonomic and nomenclatural changes are needed to bring the classification up to date. It is the aim of the present article to review the nomenclatural problems in the Phyllanthinae which may affect students of the flora of the Old World tropics.

St. John (Taxon 6: 198-199. 1957) has already pointed out that the genus *Breynia* Forst. is a latter homonym of the Capparidaceous *Breynia* L.; he has consequently proposed that *Breynia* be placed on the list of concerned generic names. Although *Breynia* is a relatively small genus of about 30 species and is only weakly differentiated from *Sauropus*, its conservation appears warranted, as a cultivar of the type species *B. disticha* is rather well known as an ornamental, and several species are common in southern and eastern Asia.

However, the most urgent nomenclatural problem in the Phyllanthinae relates not to *Breynia* but rather to the large genus *Glochidion* Forst. (Char. Gen. Pl. 113. *pl.* 57. 1776), which is represented by more than 200 species in the tropics of Asia and Oceania. *Glochidion* has been generally accepted as generically distinct from *Phyllanthus* since the dispositions of Hooker (Fl. Br. Ind. 5: 306. 1887) and Pax (Naturl. Pflanzenfam. ed. 1, 3(5): 23. 1890), and will surely be so treated in the future. Unfortunately, all recent workers appear to have overlooked the fact that *Glochidion* Forst. is a taxonomic synonym of the earlier *Agyneia* L. (Mant. Alt. 161. 1771). Linnaeus based his genus on two Chinese plants which are now considered a single species, *Glochidion puberum* (L.) Hutch. The type species of *Glochidion, G. ramiflorum* Forst. f., belongs in the same sect. (*Hemiglochidion*) as *G. puberum*, and there seems no doubt that they are in fact congeneric. Mueller (in DC. Prodr. 15[2]: 238. 1866) pointed out that *Agyneia* L. is synonymous with *Glochidion*, but upheld *Agyneia* in the completely different application given that name by Ventenat. This latter author (Descr. pl. nouv. jard. Cels. 23. *pl.* 23. 1800) mistook for Linnaeus's *Agyneia impubes* an entirely different plant already described by Linnaeus (Syst. ed. 13. 707. 1774) as *Phyllanthus bacciformis*. This completely altered usage of the name *Agyneia* has been perpetrated by Mueller and later authors up to the present time, although it is of course indefensible under current rules of nomenclature.

Since less than 10 of the species of *Glochidion* have received valid names in *Agyneia*, failure to conserve the former would necessitate at least 200 new combinations. In view

*) Studies in the Euphorbiaceae, Phyllanthoideae, V.

of the general acceptance of *Glochidion* as a distinct genus, it is hereby proposed (69) that it be added to the list of conserved generic names and that *Agyneia* L. be rejected. This leaves at hand only the problem of the disposition of *Agyneia* sensu Vent. non L.

Mueller upheld Ventenat's generic concept on the basis of floral characters ('glandulae extrastaminalis laciniis calycis oppositae') and placed it next to *Sauropus;* in this he has been followed by most subsequent authors, including Pax and Hoffmann (Pflanzenr. IV. 147. XV: 212. 1922). However, Bentham (Gen. Pl. 3: 271. 1880) pointed out that the squamae or scales of *Agyneia* are not homologous with the floral disk in other genera of Phyllantheae, and that the genus was scarcely different from *Phyllanthus* sect. *Synostemon.* Examination of flowers shows that Bentham was correct, for the 'glands' appear to be merely the differentiated inner faces of the calyx-lobes. Consequently, it appears necessary to transfer the single species of *Agyneia* sensu Ventenat to the taxon mentioned by Bentham. The first generic name published for that group is *Diplomorpha* Griff. (Not. 4: 479. 1854), which however is a later homonym of *Diplomorpha* Meissner (1841). The earliest available name then is *Synostemon* F. Mueller (Fragm. Phytogr. Austr. 1: 32. 1858). Although combined with *Phyllanthus* by Mueller and Bentham and with *Glochidion* by Pax and Hoffmann, *Synostemon* appears to be generically distinct from both. It differs from *Phyllanthus* in its pollen grain morphology and lack of a true floral disk, and from *Glochidion* by virtue of its habit, more or less free styles, and ventrally channelled bony seeds. Consequently, the species accepted by Mueller and by Pax and Hoffmann as *Agyneia bacciformis* is hereby transferred to *Synostemon.* *)

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*) **Synostemon bacciforme** (L.) Webster, comb. nov. (*Phyllanthus bacciformis* L. Syst. ed. 13. 707. 1774).

NEWS AND NOTES

CORRECT NAME FOR THE TYPE OF THIELAVIA ZOPF

In 1876, Zopf established a new genus — named *Thielavia* — for the perfect state of an Ascomycete which he thought incorrectly to form a pleomorphic life cycle with the imperfect fungus *Torula basicola* Berkeley & Broome 1850. The only species mentioned, and becoming, therefore, type species was *Torula basicola* Berk. & Br. = *Thielavia basicola* (Berk. & Br.) Zopf. Much later, the imperfect fungus (*Torula basicola* Berk. & Br. = *Thielaviopsis basicola* [Berk. & Br.] Ferr. 1913) has, however, been proven to represent chlamydospore- and endoconidium-producing stages of a specifically distinct commensal the perfect state of which remains unknown.

The Code does not, in fact, permit the application of a basionym to more than one and the same taxon. Art. 59 entitled "Choice of names of fungi with a pleomorphic life cycle" is no exception to that principle. It implies only that "the author who first describes a perfect state may adopt the specific epithet applied to the c o r r e s p o n d i n g [spaced types mine] imperfect state, but his binomial for the perfect state is to be attributed to him alone, and is not to be regarded as a new combination".

Thielavia basicola (Berk & Br. 1850) Zopf 1876 and *Thielaviopsis basicola* [Berk. & Br. 1850) Ferr. 1913 as stages belonging to two different species cannot bear the same epithet ("basicola") which refers, in both cases, to the basionym *Torula basicola* Berk. & Br.

In 1951, I proposed, therefore, a new name for the Ascomycete, *Thielavia renominata.*

Quite recently, Härri (1959, p. 30) opposes my proposal, as follows: "Zwischen *Thielavia basicola* Zopf und *Thielaviopsis basicola* (B. et Br.) Ferr. besteht demnach neben der engen ökologischen Beziehung keine nähere systematische Verwandschaftkeit. Aus diesem Grunde [!] dürfen die beiden im Speziesnamen gleichlautenden Epitheta nebeneinander bestehen bleiben (Code . .), und der Vorschlag von Paclt (1951), *Thielavia basicola* in *Thielavia renominata* Paclt umzubenennen, ist gegenstandslos". Furthermore, he remarks (l.c., p. 28): "Zopf (1876) beschrieb einen Ascomyceten auf Wurzeln von *Senecio elegans* als einzige Art einer neuen Gattung *Thielavia.* Als Epitheton für diese Typusart wählte er '*basicola* B. et Br.'. Berkeley und Broome (1850) verstanden

jedoch unter ihrer '*Torula basicola*' das Chlamydosporenstadium des später als *Thielaviopsis basicola* bekanntgewordenen Pilzes. Der Name *Thielavia basicola* Zopf (non *Torula basicola* B. et Br.) ist demnach gültig für die Ascomycetenspecies, die zudem Gattungstypus sein muss; *Torula basicola* B. et Br. darf nicht einbezogen werden (Code intern. Nom. Bot. 1956, Art. 59)."

It is just the other way! If *Thielavia basicola* and *Thielaviopsis basicola* were treated as conspecific, i.e. as members of one and the same pleomorphic life cycle, the former name would be quite valid, as stated by the Code (Ed. 1956, Art. 59; Ed. 1952, Art. 69; Ed. 1947, Art. 57).

Thus, the arguments of Härri are unacceptable, and the only correct name for the fungus known formerly as *Thielavia basicola* is *Thielavia renominata.*

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J. Paclt

THE SPELLING OF BOOPHANE

The name of one of William Herbert's Amaryllidaceous genera '*Boophane*' is seen spelled in four different ways. Therefore, it seems advisable to review the situation in order to arrive at the legally correct spelling.

Boophane: Herbert (A Treatise on Amaryllideae) p. 17, 1821. (Appendix, Edward's Botanical Register, vol. 6).

In this work only the one spelling is used and it is accompanied by a full description and synonymy of the taxon. No derivation of the name is given.

Buphane: Herbert, in Curtis' Botanical Magazine, sub. t. 2578, 1825.

In a brief discussion of certain Amaryllidaceous genera following a description of *Brunsvigia josephinae* v. *josephine* (t. 2578) Herbert states in part, "*Buphane* (Boophane, *Appendix*) forms a link between Amaryllis and Haemanthus."

Buphone: Herbert, in Curtis' Botanical Magazine, post t. 2606 sub. Amaryllidearum Synopsis, 1825.

The genus does not appear in the index of the volume.

Buphane: Herbert, Amaryllidaceae, pp. 239-241, 1837.

The above spelling is used consistently in this volume, appearing on pp. 61, 77, 385, 390, 392 and on plate 22 as well as the pages cited above. No derivation or other spelling is mentioned.

Marloth (Flora of South Africa, 4: 115, 1915) accepted the spelling Buphane postulating it was derived from Bupho = toad.

Milne-Redhead and Schweickerdt (A new conception of the genus *Ammocharis* Herb.) in Journ. Linn. Soc. Lond. 52: 162 (footnote). 1939, accept Wittstein's (Etymol. Bot. Handworterbuch, p. 131. 1856) derivation of the genus name from Boûs = ox and oun = murder. This was based on the fact that *B. toxicaria* is known to be fatal to horned cattle. They further state, "Herbert in 1821 spelt the name 'Boophane' which in view of the above is clearly an error for 'Boophone'," and that Herbert in 1825 changed the spelling to 'Buphone'. On the basis of this, Milne-Redhead and Schweickerdt conclude that the correct spelling is 'Boophone'. Thus they accept Herbert's supposed correction of 'phane' to 'phone', but reject his change of 'boo' to 'bu' because of the derivation.

It is true that in 1825 Herbert once spelled the name Buphone, but subsequently he used the spelling Buphane consistently. This suggests that Buphone may well have been a typographical error.

I have discussed the situation with G. H. M. Lawrence and we presented the problem to F. A. Stafleu. Dr. Stafleu is of the opinion that, since there is no clear proof that the original spelling, Boophane, is an orthographic or typographic error, neither the change to Buphane nor that to Boophone can be justified under the present Code of Nomenclature, and that the original spelling must stand.

D. G. Huttleston

NEOTYPES

In view of the confusion which followed a rather warm discussion of Prop. H. (155 — Bullock et Ross, Taxon 7: 258) for Article 7 at the IXth International Botanical Congress at Montreal, Canada, it seems appropriate to attempt to review some of the consequences which would result from the adoption of this proposal to delete neotypes, leaving only the descriptions as types when the original material could no longer be found.

I must first acknowledge that I have done exactly what Bullock and Ross suggest i.e.

use the description and an illustration as the type when it was impossible to locate the type material. This was done in determining the identity of the taxon *Lupinus ornatus* (see *Leaflets of Western Botany* 8: 52. 1956). I did point out that the material of *L. hellerae* was representative material and amounted to a topotype (i.e. from the original type locality). In this particular case the illustration in Edwards Botanical Register and the accompanying description are exceptionally good and are almost as good as an actual specimen. Original descriptions seldom have such excellent illustrations. The description alone would not have been sufficient to verify the identity of the taxon.

Even with the excellent colored illustrations in the Botanical Magazine, unless the illustration and description are those which first describe the taxon, there is no assurance that they represent the material a different author used when he supplied the original description for a taxon.

I might cite the mass of "species" described by C. P. Smith in Species Lupinorum, which, without specimens, would be impossible to identify even though he supplied elaborate latin descriptions. Smith was for the most part describing variations of individual plants sent to him without picking out characteristics which could be used to identify species. His shotgun approach of scattering names on plants undoubtedly placed some names on taxa which require a name but to attempt to unravel this maze without specimens would be impossible and where specimens cannot be found there will probably be names which will have to be rejected as provided in the present rules. I believe this same problem could arise as much of the "protologue" with the types of species wear out with time and use.

In short it is quite conceivable that it would eventually be necessary for monographers to designate neotypes for many old long established names and if we are to achieve stabilization of names we must certainly have a means of maintaining material considered to typify these taxa. If not, there would be a gradual and continual loss of the oldest and longest established names as the "protologue" disintegrated in time.

In short, I view the idea of deleting the term neotype as casting a shadow on the entire type method of verifying taxa. It goes without saying that neotypes should not be designated without extreme care and the present rules provide that such are only acceptable so long as the material used originally in describing the taxon is missing. Article 8 in the 1956 International Code quite adequately takes care of any abusive use of either neotypes or lectotypes.

David B. Dunn

NEW YORK BOTANICAL GARDEN

Dr. William C. Steere, Director of The New York Botanical Garden, has been notified by Dr. Alan T. Waterman, Director of the National Science Foundation, that the Garden has been awarded a grant of $ 145,400 for the support of a plant survey of the Guiana Region of South America under the direction of Dr. Bassett Maguire, Head Curator and Coordinator of Tropical Research, and Dr. John J. Wurdack, Associate Curator. The grant, which will be five years in duration, became effective July first of this year.

The New York Botanical Garden also received a National Science Foundation grant of $ 20,100 of three years' duration, for the support of basic research on monographic studies in the Hypocreales (Ascomycetes) under the direction of Dr. Clark T. Rogerson, Curator of Cryptogamic Botany. The Hypocreales are higher fungi related to the mushrooms.

The third grant to the Garden — $ 6,000 for one year — is for the support of basic research on the characterization of causal agents in the crown-gall of plants and is under the direction of Dr. Richard M. Klein. Dr. Klein, who is a plant physiologist, holds the Alfred H. Caspary Curatorship at The New York Botanical Garden.

EXCHANGE OF PUBLICATIONS

The Federal Herbarium (SRGH), Salisbury, Federation of Rhodesia and Nyasaland has been struggling for a number of years to improve its collection of taxonomic works. Its staff is now doing its best to help with the writing of the Flora Zambesica and the lack of botanical literature is creating more difficulties than ever. Efforts to remedy this state of affairs are being made by the purchase, as well as the manufacture on the spot, of microfilm and the purchase of books in the normal way.

Many other herbaria in the less developed countries of the world must be in a similar state but perhaps there are members of I.A.P.T., both personal and institutional, who could help us if they knew what our require-

ments were. There follows a list of taxonomic works, mainly parts of runs of journals, which we would be able to offer in exchange and then a list of works of which we are particularly in need. This latter list is only a selection and we would be glad to hear of any other works that might be available for exchange. Correspondence should be addressed to the Senior Botanist, Federal Herbarium, Branch of Botany and Plant Pathology, Department of Agriculture, P.O. Box 8100, Causeway, Salisbury, Rhodesia and Nyasaland.

Spare copies of Journals etc. available from the Federal Herbarium.

J. S. Afr. Bot. Vols. I-VIII, part one, inclusive but Vol. VI, part 4 missing; also Vol. I, 1, 3; Vol. II, complete; Vol. XII, 1; Vol. XIV, 1 and 2.

Ann. Bolus Herb. Vol. I-IV but Vol. III, parts 2 and 3 missing.

Natal Plants (Medley Wood) Vol. I; Vol. IV, part 2; Vol. V, part 1.

Hooker's Icones, 5th Series Vol. I, part 4; Vol. II, parts 1 and 2.

Contr. Fl. Katanga (De Wildeman) 1921 and Suppl. V (De Wildeman & Staner) 1933.

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Botanical Survey of S. Africa Memoir 1, Phan. Fl. Uitenhage & Port Elizabeth, Schönland 1919; Memoir 3, S. Afr. Cyperac., Schönland 1922; Memoir 15, Veg. Map. S. Afr., Pole Evans 1936; Memoir 17, Veg. Div. Albany & Bathurst, R. A. Dyer 1937; Memoir 18, Notes Veg. Kamiesberg, Adamson 1938; Memoir 19, Value of Bot. Survey & Mapping of Veg., Pentz 1938; Memoir 20, Check-list Fl. Pl. George, Knysna etc., Fourcade 1941; Memoir 22, Roadside Obs. Veg. E. & C. Africa, Pole Evans 1948; Memoir 23, Veg. Weenen County, Natal, West 1951.

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Trans. Linn. Soc. Lond., 2nd Ser., Bot. Vol. II, part 7; Vol. VII, parts 16-20 inclusive; Vol. VIII complete (parts 1-8).

Parts of Journals etc. required in exchange.

Engl., Bot. Jahrb. Vols. 36, 37, 38, 39 and 65 onwards.

Notizbl. Bot. Gart. Berl. Vols. from 1930 onwards.

Fedde, Repert. Vols. 1, 2, 19, 20, 21, 23, 27, 28, 29, 31, 37, 40, 41, 42, 44, 45, 46, 47, 49, 50, 51, 52 and 53; and Beihefte, especially Beihefte 40, I and II.

Bull. Jard. Bot. Brux. Vol. 9, fasc. 3; Vol. XI fasc. I up to page 154.

Journ. Linn. Soc., Bot. Vols. 33 and 34.

We are also in need of a considerable number of general taxonomic books and would be glad to hear of any of these offered in exchange.

H. Wild

NATIONAL HERBARIUM OF ETHIOPIA

The *Herbarium of University College, Addis Ababa,* which will be the National Herbarium of Ethiopia, was inaugurated on November 19 by His Imperial Majesty Haile Selassie I. It contains at the moment about 4.000 sheets covering some 1.800 species, mostly collected by H. F. Mooney and determined at Kew. This is, of course, only a beginning but it is hoped to build up an interesting and valuable collection of plants from Ethiopia, the Somalilands and adjacent countries.

PERSONALIA

Le Prof. Marcial R. Espinosa, doyen des botanistes du Chili et chargé des collections cryptogamiques du Museo Nacional de Historia Natural du Chili, pendant près d'un demi siècle, est mort à Santiago le 7 août 1959, à 85 ans. Il publia une cinquantaine de bons mémoires sur les champignons (*Fomes, Cyttaria*), algues, fougères et phanérogames (*Nothofagus, Gomortega, Beilschmiedia, Ranunculus,* cactées, bromeliées, etc.) du Chili.

Dr. G. S. Puri, M.Sc. Hons., Ph.D. (Luck.), Ph.D. (London), F.G.S., F.G.M.S., F.B.S., F.L.S. (London) has been appointed Director of the Central Botanical Laboratory, Allahabad. He succeeds Dr. E. K. Janaki Ammal, M.A., D.Sc., F.L.S., F.N.I., who was the first Director of this Laboratory and has just now retired.

The National Science Foundation announced this summer that David D. Keck has resigned his position at the New York Botanical Garden in order to remain permanently as Program Director for Systematic Biology of the Foundation's Division of Biological and Medical Sciences. He came to this position in October 1958 on leave of absence from the Garden.

BIBLIOGRAPHY OF BRYOLOGY

A comprehensive bibliography of bryology is under preparation. When completed, it will be published by Scholar's Library Publishers of New York City and New Orleans.

The author wishes to include the latest, comprehensive publication of the bryology of every major area of the world in this list. Toward that end, every bryologist who has done floristic or taxonomic work which covers a state or nation is requested to forward a complete citation (title, journal, date) to the undersigned.

All monographic studies of genera or families will be included also if the pertinent information is likewise forwarded to, Dr. Leo F. Koch, 429 Natural History Bdg., University of Illinois, Urbana, Ill., U.S.A.

FLORIDA ORCHIDS

A new edition (photo-offset) of Ames, Blanche and Oakes Ames *"Drawings of Florida Orchids"* was published in December 1959. It is put out by the South Florida Orchid Society under the auspices of the Bot. Museum of Harvard University. Photo-offset at Harvard University Printing Office. Cost in continental U.S. $ 4.75. Elsewhere add postage. Order from Dr. Guy A. Stoddard, 4, LaGorce Circle, Miami Beach, Florida.

The original, published at the press of the Botanical Museum in 1947, was an extremely limited edition of 335 copies and has long been unavailable. The book contains line drawings and descriptions and discussions of all known species of orchids from Florida.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Die natürlichen Pflanzenfamilien

Engler & Prantl: Die natürlichen Pflanzenfamilien, 2nd ed. Vol. 17 a II. R. Fries: *Annonaceae;* J. C. Th. Uphof: *Eupomatiaceae, Myristicaceae;* H. Melchior & W. Schultze-Motel: *Canellaceae* (Nachtrag zu Bd. 21). Berlin, 1959. (229 pp., 49 figs.; price ca. DM. 65.—).

The Cactaceae

C. Backeberg: Die *Cactaceae.* Handbuch der Kakteenkunde. Vol. III. *Cereoideae* (*Austrocactinae*). Jena, 1959. (pp. 1361-1926, 539 photographs in black and white and in colour, and 53 plates).

Handbook of Leafy Woody Plants

Handbuch der Laubgehölze, ed. by G. Krüssmann. (Two vols., comprising about 900 pp. and 300 plates; with enumerations and descriptions of genera and species, notes on terminology, European arboreta, etc. Pts. 1-4 appeared in 1959, publ. by Paul Parey, Berlin and Hamburg. The complete work consists of ca. 12 parts; price per part DM. 18.60).

Flora of Central Siberia

M. G. Popov: Flora srednej Sibiri. Vol. II. *Pyrolaceae - Compositae, Salicaceae - Ceratophyllaceae.* Publ. by the Akademija Nauk SSSR, Moscow/Leningrad, 1959. (pp. 559-917, fig. 66-104).

Handbook of British Rubi

W. C. R. Watson†: Handbook of the Rubi of Great Britain and Ireland. Cambridge Univ. Press, 1958. (xi + 274 pp., 50 drawings by R. M. Ball & A. W. Darnell; an enumeration of the species with descriptions; a kind of key is provided. Price 63 s.).

Drawings of British plants

S. Ross-Craig: Drawings of British plants. XIII. *Umbelliferae* (2), *Araliaceae, Cornaceae.* London, 1959. (30 plates; price 9 s. 6 d.).

Flora of Madagascar

Flore de Madagascar et des Comores. A. Cavaco: 80. Monimiacées. (44 pp., 10 figs.). J. Arènes: 131. Sterculiacées. (537 pp., 117 figs.). Both Paris, 1959.

Fern flora of the Philippines

E. B. Copeland: Fern flora of the Philippines. Vol. 1. Manila, 1958. (191 pp.; with keys to genera and species, descriptions, and general introduction; deals with *Ophioglossa-*

ceae to *Davalliaceae*. Publ. as Monograph No. 6, vol. 1, of the Institute of Science and Technology).

Flora of Pacific North America

C. L. Hitchcock, A. Cronquist, M. Ownbey & J. W. Thompson: Vascular plants of the Pacific Northwest. 4. *Ericaceae - Campanulaceae*. Univ. of Washington Press, Seattle, Wash., 1959. (510 pp., numerous figs.; price $ 12.00).

Flora of Quebec

Père Louis-Marie: Flore-Manuel de la Province de Québec. 3rd ed. Publ. by the Centre de Psychologie et de Pédagogie, 8225, boul. St.-Laurent, Montréal 11, Canada. (A revised ed. with numerous plates in full colour; price $ 3.50).

Flora of Alberta

E. H. Moss: Flora of Alberta. Univ. of Toronto Press, Toronto; Oxford Univ. Press, London; 1959. (vi + 546 pp.; a manual of vascular plants growing without cultivation in the prov. of Alberta, Canada; with keys to families, genera and species, descriptions, references to subspecies and notes on habitats and distribution in the region. Price $ 10.00).

Flora of Nevada

Contributions toward a flora of Nevada No. 46. C. F. Reed: *Amaranthaceae* of Nevada. Beltsville, Md., 1959. (15 pp., 1 plate, 6 maps).

Brazilian botanical bibliography

Bibliografia Brasileira de Botânica 1950/55. Publ. by the Instituto Brasileiro de Bibliografia e Documentação, Rio de Janeiro, 1959 (?). (Lists 854 titles in a topical arrangement).

REQUESTS

Y. I. Barkoudah, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands, is preparing a monograph of the genus *Gypsophila* (Caryophyllaceae) and would be very grateful to receive viable seeds (± 25) of any species of that genus, except the following: Gypsophila altissima, bicolor, cerastoides, digenea, elegans, fastigiata, muralis, paniculata, perfoliata, repens, silenoides, tenuifolia, tomentosa, transsylvanica, trichotoma, and viscosa, which are already available to him.

It is desirable to indicate the origin of the seeds sent, whether from cultivated plants or from nature, and the locality in the latter case.

Any expenses, whatever they are, will be repaid.

*

Professor R. D. Gibbs, McGill University, Montreal 2, Quebec, Canada, would be glad to receive seeds and/or freshly cut twigs of the following plants:

Rhoiptelea, Juliania, Orthopterygium, Planera, Ampelocera, Engelhardtia, and *Garrya* (other than *G. elliptica*).

If the specimens are wrapped in pliofilm and marked "Biological Specimens, of no Commercial Value, to be used only for Chemical Analyses" and sent by air they will come quickly through customs. He will, of course, be glad to refund postage.

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Sweden: Mr. Bo Peterson, Botaniska Museet, Lund. Postgiro 43.35.39.

U.S.A.: Dr. R. C. Rollins, Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

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THEODOR KOTSCHY, EIN PIONIER DER BOTANISCHEN ORIENTFORSCHUNG [1])

K. H. Rechinger (Wien)

Unter den Forschern, welche die Grundlagen zu Boissiers monumentaler Flora orientalis zusammengetragen haben, nimmt der Österreicher Theodor Kotschy neben dem Franzosen Aucher-Eloy, dem Deutschen C. Haussknecht und den Deutsch-Russen A. v. Bunge und F. A. Buhse eine hervorragende Stellung ein, sowohl was die für damalige Zeiten gewaltige Ausdehnung seiner Expeditionen anbelangt, als auch betreffs der Menge, Qualität und sorgfältigen Etikettierung seiner Ausbeuten.

Theodor Kotschy wurde am 15. April 1813 zu Ostrau in Oesterreichisch-Schlesien als Sohn des evangelischen Pfarrers Karl Kotschy geboren. Durch die gärtnerischen Neigungen seines Vaters angeregt, erwachte in dem Knaben schon sehr frühzeitig ein lebhaftes Interesse für die Pflanzenwelt. Mit neun Jahren unternahm er bereits botanische Streifzüge ins Riesengebirge, die er in seinen Studienjahren bis in die Zipser Karpathen ausdehnte. Für den geistlichen Stand bestimmt, kam Kotschy 1833 zur weiteren Ausbildung nach Wien. Kotschy's innere Berufung zum Naturforscher war jedoch stärker und schon in den beiden folgenden Jahren unternahm er mit äusserst geringen Geldmitteln ausgestattet botanische Forschungsreisen in das Temeser Banat, nach Siebenbürgen, Slavonien, Kroatien und in das österreichische Litorale. Aber schon 1835 schloss sich der kaum zweiundzwanzigjährige einer Expedition österreichischer Bergwerksgeologen an, die unter der Leitung von Russegger über Wunsch des Vizekönigs von Aegypten die Mineralschätze im Kilikischen Taurus und die Goldwäschereien am Blauen Nil untersuchen sollte. Kotschy reiste Ende 1835 über Athen nach Alexandrien und Kairo, dann 1836 weiter nach Nord-Syrien und Kilikien. Er durchforschte insbesondere die Umgebung von Antiochia, das Cassius-Gebirge, die Ebene von Tarsus und schliesslich den gewaltigen Bulgar-Dagh im Taurus, damals botanisch völlig unbekannte Gebiete. Im folgenden Jahre folgte Kotschy Russegger nach Ober-Aegypten und tief ins Innere Afrikas; er erreichte dabei 10° N.Br.

Ungemein bezeichnend für Kotschy's Wesen ist, dass er, nach Auflösung der Expedition in Alexandrien, nicht in die Heimat zurückkehrte, sondern ungeachtet der überaus grossen, kaum überstandenen Anstrengungen und der völlig unzureichenden ihm zur Verfügung stehenden Mittel in Aegypten zurückblieb und bereits 1839 zu einer zweiten grossen Expedition ins Innere Afrikas aufbrach. Wegen Ausbleibens finanzieller Unterstützung musste diese Expedition frühzeitig abgebrochen werden,

[1]) Dargestellt in Anlehnung an E. Fenzl, Theodor Kotschy, eine Lebensskizze, in Almanach der Kais. Akad. d. Wiss., **17** (1867).

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dennoch waren ihre Ergebnisse bedeutend. Körperlich aufs Aeusserste erschöpft erreichte Kotschy schliesslich Kairo.

Durch diesen Schicksalsschlag keineswegs entmutigt dachte Kotschy dennoch nicht daran, in die Heimat zurückzukehren, sondern er stellte seine Hauptgläubiger, so gut es eben ging, zufrieden und brach zu einer Reihe von neuen Expeditionen auf, diesmal wieder nach Asien. Er bereiste 1840/41 Cypern, Syrien, das nördliche Mesopotamien, Kurdistan und reiste am Tigris abwärts über Babylon nach Baghdad. Weiter ging es über die Nordküste des Persischen Golfes und die Insel Karak durch das Gebiet von Persepolis und die Gebirge um Schiras 1842 weiter nach Teheran. Im folgenden Jahre durchforschte Kotschy das Elbursgebirge und bestieg als erster den über 5600 m hohen Demawend, einen erloschenen Vulkankegel nordöstlich von Teheran.

Von allen diesen Expeditionen brachte Kotschy eine in Anbetracht der unverhältnismässig geringen aufgewandten Geldmittel unwahrscheinlich grosse Menge von vielfach neuen Pflanzen aber auch Insekten und Fischen aus naturwissenschaftlich damals völlig unbekannten Gebieten mit. Nun waren aber Kotschy's Mittel völlig erschöpft und er geriet in bitterste Not. Kotschy war für seine Landsleute damals verschollen und lebte von der Mildtätigkeit des russischen Gesandten in Teheran, Grafen von Medem.

Nur durch Zufall und auf Umwegen erhielt die Direktion des k.k. Naturalienkabinetts, des Vorläufers des Naturhistorischen Museums in Wien, von Kotschy's verzweifelter Lage Kenntnis und veranlasste seine sofortige Rückkehr nach Wien auf Staatskosten. Die Heimreise ging über Erzerum — Trapezunt — Konstantinopel im Spätherbst 1843 vor sich und Kotschy langte nach achtjähriger Abwesenheit am 16. Dezember — seine letzten persischen Sammlungen erst ein Jahr später — wohlbehalten in Wien an. Aber auch diesmal blieb Kotschy nicht von einem schweren Missgeschick verschont. Seine Tagebücher gingen bei der durch das Personal der russischen Gesandtschaft in Teheran besorgten Versendung seiner Ausbeute verloren und alle Nachforschungen darüber sind vergeblich geblieben. So kommt es, dass Einzelheiten gerade über diese so hoch bedeutenden Reisen Kotschy's nie bekannt geworden sind.

In Wien widmete sich Kotschy zunächst mit Fleiss dem Ordnen und Verteilen seiner Sammlungen, die die Zahl von 300.000 Exemplaren überstiegen und die allgemein die verdiente Anerkennung fanden. Seine angeborene Reiselust liess ihn aber nicht ruhen und so sehen wir Kotschy in den Jahren 1845 bis 1850 neuerlich verschiedene Teile der Alpen und der Transsilvanischen Alpen bereisen.

Indessen war Kotschy 1847 über Initiative von Fenzl und Endlicher und über spezielle Verwendung von Erzherzog Ludwig zum Assistenten am k.k. botanischen Hofkabinett ernannt worden; 1852 wurde für ihn dann eine zweite Kustos-Adjunkten-Stelle geschaffen und in dieser, im Verhältnis zu seinen Verdiensten bescheidenen Stellung blieb Kotschy bis zu seinem 1866 eingetretenen Tode.

Aber bis dahin unternahm Kotschy noch mehrere bedeutende Forschungsreisen, vier davon in den Orient, nämlich 1853 nochmals in den Kilikischen Taurus, wobei sein Interesse für die Eichen geweckt wurde, worüber er später seine bekannte, prächtig illustrierte Monographie verfasste. Dann bereiste er 1855 Unter-Aegypten und ging über Suez und durch Palästina in den Antilibanon; sein weiteres Vordringen wurde leider durch die dort damals besonders unsicheren Verhältnisse verhindert. Aber schon 1859 ging Kotschy, der inzwischen Boissier in Genf die Bearbeitung seiner botanischen Sammlungen übertragen hatte, wieder nach Cypern, ins östliche Kilikien und nördliche Kurdistan, und er drang trotz Bedrohung durch räuberische Stämme bis an den Wan-See in Armenien vor. Endlich 1862 verliess Kotschy Wien zu seiner letzten Orientreise; diesmal durchforschte er als Begleiter von Franz Unger Cypern und anschliessend allein das Amanus-Gebirge in Nord-Syrien. Doch auch diesmal

konnte er seine Pläne wegen ausgebrochener Unruhen nicht in vollem Umfang ausführen und sich schliesslich nur durch Flucht vor dem ihm nachsetzenden Raubgesindel in Sicherheit bringen. In Alexandrette entging Kotschy dem Tode durch eine schwere Malaria nur mit knapper Not. Nun war Kotschy's beispiellose körperliche und seelische Widerstandskraft gebrochen und eine Lungenentzündung setzte seinem Leben am 11. Juni 1866 im Alter von 53 Jahren ein Ende.

Kotschy war aber nicht nur einer der bedeutendsten naturwissenschaftlichen Forschungsreisenden und Sammler seiner Zeit. Es gelang ihm noch in vorgeschrittenen Jahren die in seiner Jugend wegen seiner frühzeitig begonnenen Reisen offenbar lückenhaft gebliebene wissenschaftliche Bildung abzuschliessen. Seine vorwiegend in den Jahren 1858 bis 1865 veröffentlichten Arbeiten, teils auf botanischem, teils auf geographischem Gebiet, geben nicht nur Zeugnis von seinem Scharfblick, sondern auch von seinen wohlbegründeten Kenntnissen in vielen Wissenszweigen.

Wir dürfen uns glücklich schätzen, in der Botanischen Abteilung des Naturhistorischen Museums in Wien die vollständigste Serie von Kotschy's Herbarpflanzen in ausgewählt schönen Exemplaren zu besitzen. Der Verfasser dieser Zeilen fühlt sich als ein später Amtsnachfolger Kotschy's, der dessen Expeditionsrouten im Orient wiederholt gekreuzt hat verpflichtet, das Andenken an diesen bedeutenden Mann wachzuhalten, der durch die Grösse seiner Leistungen, wie durch seine Bescheidenheit ein unerreichbares Vorbild für seine Nachfolger bleiben wird.

PERSOON'S SYNOPSIS 1801 AS STARTING POINT FOR ALL FUNGI?

Rolf Singer (Tucuman)

Since the International Botanical Congress in Stockholm, 1950, there has been discussion especially in the Committee for Fungi, of proposals for a uniform starting point for Fungi, including all Fungi caeteri, and C. H. Persoon, Synopsis methodica Fungorum, Gottingiae 1801, has been suggested as this uniform starting point.

The consequences of such a change, if it were ever accepted, would be twofold. In the first place, a change of starting point rules at this time — after the starting points of fungi caeteri have been fixed since 1910 — would demoralize those who have attempted in the past to obey the rules. The proposal occasionally finds some support by those who wish to maintain fungus names for species of special importance where a strict application of the rules has brought about changes in their names, which have been used by applied scientists and amateurs since they were included in Saccardo, Sylloge. What would be the result of the acceptance of 1801 instead of 1821 in the Basidiomycetes? As we shall see below, the aim of the group wishing to achieve standardization by means of a change in starting point would not be achieved.

Secondly, as a consequence of such a change of Art. 22, we would, on the contrary, obtain very numerous and serious changes, particularly at the specific level. Since it has never been pointed out in detail what such a change in the rules would mean in terms of mycological nomenclature, we have here attempted to give a list of the consequences which we would have to face in the Basidiomycetes.

Amanita vaginata becomes *A. livida* Pers.

Amanita fulva becomes *A. spadicea* Pers.

Amanita phalloides becomes *A. viridis* Pers.

Amanita pantherina becomes *A. umbrina* Pers.

Lepiota clypeolaria becomes *L. columbrina* (Pers.) Gray.

Armillariella (or *Clitocybe*, or *Armillaria*) *mellea* becomes *A.* (*C.*, *A.*) *polymyces* (Pers.) New combinations become necessary.

Armillariella (or *Clitocybe*) *tabescens* becomes *A.* (*C.*) *gymnopodia* (Bull. ex Pers.). A new combination necessary.

Pholiota aurivella becomes *P. rhabarbarina* (Pers.), a new combination.

Kuhneromyces mutabilis (*Pholiota* m.) becomes *K.* (*P.*) *caudicinus*, a new combination.

Gomphidius glutinosus becomes *G. viscidus* (L. ex Pers.) Fr. and what was generally known as *G. viscidus* (*G. rutilus*) becomes *G. gomphus* (Pers.), a new combination. Note the confusion about *G. viscidus* this will cause!

Collybia butyracea becomes either *C. trichopus* or *C. leucophylla*, both proposed by Persoon and both to be transferred to *Collybia*.

Clitocybe leucophylla (Fr.) Morten Lange would be based on a homonym and have to be renamed (see above under *Collybia butyracea*!).

Tricholoma columbetta becomes *T. album* non (Schaeff.?) Fr.

Tricholoma album in the accepted sense (Fr.!) becomes subject of a *nomen novum* since Persoon's name for it, *A. leucocephalus* Persoon non Fr. would be a homonym in *Tricholoma*.

Coprinus micaceus becomes *C. ferrugineus* (Pers.).

Corrinus atramentarius becomes *C. plicatus* (Pers.).

Agaricus arvensis may become *A. edulis* Pers., depending on the interpretation of the species by Persoon, but will not be the same as *A. edulis* of some modern authors.

Naematoloma (or *Hypholoma*) *sublateritium* becomes *N.* (or *H.*) *lateritium* (Schaeff. ex Pers.), in *Naematoloma* — a new combination needed.

Lactarius volemus would become *L. ruber* (Pers.), a new combination.

Russula aurata becomes *R. aurea* Pers. ex Pers.

Clitocybe infundibuliformis becomes either *C. gilba* (Pers.) Kummer or *C. gilva* (Pers. non Fr.) Kummer.

Clitocybe gilva (Pers. ex Fr., non Pers.) Kummer, the *C. gilva* of all post-friesian authors will be in need of a new name.

Pluteus cervinus would have to be changed to *Pluteus neesii* (Klotzsch in Fl. Boruss.) because Persoon's epithet *pluteus* is tautonymic in the genus *Pluteus*. Persoon's *A. cervinus* does not belong in *Pluteus*, and is generally considered a *Clitocybe*.

Laccaria laccata becomes *L. farinacea* (Huds. ex Pers.), a new combination.

Micromphale foetidum (*Marasmius foetidus*) becomes *Micromphale venosum* (Pers.) Gray (in *Marasmius*, a new combination would be necessary). This brings up the question whether Schumacher's vol. 1 (with a different *A. venosus*) is post-persoonian, a problem, like many others, at least as difficult as that of the relation of Gray, Rocques, etc. to Fries Systema Mycologicum vol. 1.

Schizophyllum commune becomes *S. alneum* (L. ex Pers.) Schröter.

Lenzites betulina becomes *L. versicolor* or *L. coriacea* Pers., in both cases new combinations necessary.

Suillus luteus (*Boletus luteus*) becomes *Boletus annulatus* Pers., a new combination to be made in *Suillus*.

Suillus flavus and *S. grevillei* are both in danger of being replaced by *Boletus annularius* Bolt. ex Pers., a new combination to be made in *Suillus*.

Strobilomyces floccopus (*S. strobilaceus*) becomes *S. cinereus* (Pers.) — a new combination.

Leccinum aurantiacum (and *Boletus aurantiacus, B. rufus*, and *B. versipellis*) become *Boletus aurantius* Pers., a new combination to be made in *Leccinum*.

Leccinum scabrum would be in need of a new name (if its varieties or subspecies are treated as species) since Persoon's *Boletus scaber* is *L. duriusculum* (Schulz.) Sing. (= *Gyroporus griseus* Quél. = *Boletus carpini* (Schultz) Moser in Gams) while the type form of Fries's *Boletus scaber* is the German *Birkenpilz* (*Leccinum scabrum* ss. Sing. et aut.).

Suillus granulatus becomes *Suillus circinans* (Pers.), a new combination needed, or simply *B. circinans* Pers. if the species is maintained in *Boletus*.

Xerocomus badius becomes a homonym in *Boletus*, since Persoon's *Boletus badius* Pers. was used for a polypore, probably *Polyporus* aff. *picipes*. Fries described *B. badius* originally as a variety of *B. castaneus* from where it can be directly transferred to *Xerocomus*, but if left in *Boletus*, as a species, it would have to be called either *B. glutinosus* Krombh. or *B. spadiceus* Krombh. (non Fr.).

Ischnoderma (or *Polyporus*) *resinosum* becomes *I.* (or *P.*) *fuscum* (Pers.) resp. Pers.

Laricofomes officinalis (Vill. ex Fr.) Kotlaba & Pouzar (*Polyporus officinalis, Fomitopsis officinalis*) becomes *L. purgans* (Pers.), or *Polyporus purgans* (Pers.), new combinations needed in all genera excepting *Boletus*!

Laetiporus sulphureus (*Polyporus s.*) becomes *L.* (or *P.*) *citrinus* (Pers.), a new combination needed.

Scutiger ovinus (or *Polyporus ovinus*) becomes *S. albidus* (Pers.), a new combination; in *Polyporus* both binomials with Persoonian

basonyms (*P. albidus* and *P. fragilis*) are preoccupied, and *P. ovinus* may be maintained.

Coriolus zonatus becomes *C. ochraceus* (Pers.), a new combination.

Cerrena unicolor (or *Daedalea unicolor*) becomes *Cerrena cinerea* (Pers.), or *Daedalea cinerea* (Pers.) Fr.

Phaeolus (or *Polyporus*) *schweinitzii* becomes *Phaeolus sistotremoides* (Pers.) Murr. resp. *Polyporus sistotremoides* (Pers.).

Serpula lacrimans (Merulius lacrimans, the "Hausschwamm" of the Germans) becomes *S.* or *M. destruens* (Pers.), — new combinations needed.

Clavaria vermicularis becomes *C. eburnea* Pers.

All the examples given above concern the commonest European species, many of them important in phytopathology, pathology of humans and animals, in forestry, in industry (as wood destroyers), or as edible or poisonous species.

A further drawback of the Synopsis is that Persoon did not have any more regard than Fries for names already proposed by his predecessors, and used the same binomial more than once (e. g. *Agaricus lacteus, bulbosus, radicatus, vitellinus, Boletus reticulatus*), more often than Fries.

Persoon's work does not, as can be seen, lend itself to the re-adoption of such names as *Tricholoma equestre, Gomphidius viscidus* (in the accepted sense) *Anellaria* (or *Panaeolus*) *separata*, etc. (vs. *Tricholoma flavovirens, Gomphidius rutilus*, and *Anellaria semiovata*).

The list given above has been made without consideration of the changes in generic nomenclature necessitated by an adoption of Persoon's Synopsis as the starting point for all fungi. It would be interesting to see what the standing of many now valid and correct generic names would be if Paulet, Roussel, and other authors publishing between 1801 and 1821 had to be taken into consideration. It seems that among others *Schizophyllum* would have to be replaced by one of at least three pre-friesian but post-persoonian names competing with it. Among the other agarics, *Collybia* or *Xerula* would be superseded by *Gymnopus* (Pers.) Roussel, etc.

It would be interesting to have a complete statistical survey of generic name changes produced by a hypothetical replacement of Fries's Systema by Persoon's Synopsis. It would furthermore be interesting to have some appraisal of the consequences of the proposal in Ascomycetes and Fungi Imperfecti other than Hyphomycetes. But, whatever the result, it seems to this writer that the consequences of the proposal would be disastrous even if only the fate of the specific epithets in the Basidiomycetes are taken into consideration.

ZUR NOMENKLATUR DER BEIDEN VON LINNAEUS UNTERSCHIEDENEN RAUVOLFIA-ARTEN [1])

Hans Peter Fuchs (Basel)

Die Verschiedenheit zwischen der von A. S. Rao 1956: 285, n. 3/334, n. 28 vertretenen Synonymie und der Zusammenstellung der Synonyme zu den beiden von Linnaeus 1753: 208, n. 1 bzw. Linnaeus 1762: 303, n. 1 & n. 2 innerhalb der Gattung *Rauvolfia* L. 1753: 208; L. 1754: 98, n. 259 unterschiedenen Varietäten bzw. Arten bei H. P. Fuchs 1958: 45, adnot. 1 lässt eine ergänzende Notiz über die Nomenklatur der beiden Linnaeus'schen *Rauvolfia*-Arten wünschenswert erscheinen.

In der ersten nomenklatorisch rechtsgültigen Publikation fasst Linnaeus 1753: 208, n. 1 beiden zur Diskussion stehenden Arten im Rang von Varietäten unter dem Namen *Rauvolfia tetraphylla* L. zusammen.

RAUVOLFIA

tetraphylla. I. RAUVOLFIA. *Hort. cliff. 75. t. 9.*
Rauvolfia tetraphylla angustifolia. *Plum. gen. 19.*
β. Rauvolfia tetraphylla latifolia. *Plum. gen. 19.*
Habitat in America *calidiore.* ♄

Aus der typographischen Darstellung wird deutlich, dass Linnaeus 1753: 208, n. 1 seine *"Rauvolfia"* L. 1738: 75/t. 9 als übergeordnete Sammelart interpretierte, der er die beiden Arten aus Plumier 1703: 19/t. 40, infra als zwei gesonderte Varietäten subsummierte (vgl. hierzu auch z.B. die Darstellung von

[1]) Fussnoten siehe am Schluss der Arbeit.

Fragaria vesca L. 1753: 494, n. 1 und die drei von Linnaeus 1753: 495 unterschiedenen Unterarten [α] *sylvestris* L.; β. *sativa* L.; γ. *chiloensis* L.). Wie A. B. Rendle 1937: 107/108, auf den sich in der Frage der gültigen Benennung der beiden in Frage stehenden *Rauvolfia*-Arten die neueren Bearbeiter der Gattung stützen (cf. e.g. Pichon 1947: 33/38; A. S. Rao 1956: 285, n. 3/334, n. 28), deutlich werden lässt, stand Linnaeus weder bei der Abfassung der Diagnose seiner spezifisch nicht näher bezeichneten "*Rauvolfia*" L. 1738: 75 noch bei der Aufstellung seiner *Rauvolfia tetraphylla* L. 1753: 208, n. 1 Herbarmaterial zur Verfügung; in dieser Tatsache liegt auch die Unterschiedlichkeit in der späteren taxonomischen Zuordnung der von Linnaeus 1753: 208, n. 1 und Linnaeus 1762: 303, n. 1 & n. 2 aufgestellten nomina specifica begründet. Der Beschreibung der "*Rauvolfia*" L. bei Linnaeus 1738: 75 liegt ohne Zweifel die von Georg Dionysius Ehret (1708-1770) nach einem kultivierten Exemplar aus dem Chelsea-Garden entworfene Zeichnung zugrunde (cf. Linnaeus 1738: 75 : "*Plantam primum florentem videre licuit in horto Chelseano, ubi eandem depingi curavi, at Botanicorum oculis hic subjicimus.*"), welche Linnaeus 1738 auf Tafel IX nach einem Stich von Jan Wandelaar (1690-1759) einer breiteren Oeffentlichkeit zugänglich machte (vgl. auch die Reproduktion dieser Tafel bei A. S. Rao 1956: t. 3, f. 3). Allgemein wurde die auf dieser Tafel abgebildete *Rauvolfia*-Art als zu *Rauvolfia tetraphylla* L. (= *Rauvolfia nitida* [N. J. Jacquin 1760: 14, n. 1 ex] L. 1762: 303, n. 1 [vgl. weiter unten die Fussnote 2] bei A. S. Rao 1956: 334, n. 28) gehörig angesehen, so schon von Burmann in Plumier 1760: 233 und in neuerer Zeit von Urban 1920: 149.

Eine dahingehende Interpretation der Ehret'schen Zeichnung bzw. des Wandelaar'schen Stiches bei Linnaeus 1738: t. IX hat zweifellos seine — zum mindesten teilweise — gut fundierte Berechtigung. Das auf dem genannten Stich zum ersten in die Augen springende Merkmal der Blattnervatur entspricht in weitgehendem Rahmen den Verhältnissen bei *Rauvolfia tetraphylla* L. [= *Rauvolfia nitida* N. J. Jacquin bei A. S. Rao 1956: 334, n. 28]. Dagegen spricht die Länge der Blattstiele mehr für *Rauvolfia tomentosa* N. J. Jacquin. Aehnlich liegen die Verhältnisse auch bei den Détaildarstellungen der Blüte. Das Gesamtbild der Blüte gibt eher den Eindruck einer einzelnen Blüte von *Rauvolfia tetraphylla* L. wieder, indem auf der Ehret'schen Zeichnung die Kronröhre parallelrandig dargestellt erscheint, und die Kronzipfel den Eindruck von einer ansehnlicheren Grösse hinterlassen. Anderseits entspricht das Verhältnis der Griffellänge zur Insertionsstelle der Staubgefässe wiederum eher den morphologischen Gegebenheiten bei *Rauvolfia tomentosa* N. J. Jacquin. Welchen Merkmalen das massgebendere Gewicht beigemessen werden soll, mag dahingestellt bleiben, da wohl mit ebenso gutem Recht und unter Beiziehung ebenso fundierter Gründe die Abbildung der "*Rauvolfia*" bei Linnaeus 1738: t. IX sowohl auf *Rauvolfia tetraphylla* L. als auch auf *Rauvolfia tomentosa* N. J. Jacquin bezogen werden kann. A. B. Rendle 1937: 107 versuchte auf Grund eines Indizienbeweises den Typotypus (cf. J. E. Dandy ex W. T. Stearn 1957: 129, adnot. 1) in Form eines Beleges aus dem Chelsea-Garden im Herbar von Philip Miller (1691-1771), heute in den Sammlungen des British Museum, Natural History, South-Kensington, London, festzulegen. Da dieser Herbarbeleg aus dem Chelsea-Garden zu dem später von N. J. Jacquin 1760: 14, n. 3 mit Hinweis auf die Beschreibung der "*Rauvolfia fruticosa, foliis verticillatis tenuissime villosis*" P. Browne 1756: 180, n. 1 als *Rauvolfia tomentosa* N. J. Jacquin bezeichneten Taxon gehört, interpretierte A. B. Rendle 1937: 107-109 auch die "*Rauvolfia*" L. und danach die *Rauvolfia tetraphylla* L. als taxonomisch hierher gehörig. Die zu dieser Auslegung geltend gemachte Tatsache (A. B. Rendle 1937: 107), dass heute sowohl in Herbarium von Philip Miller als auch in der Originalsammlung von Sir Hans Sloane (1660-1753), der die in Frage stehende Art 1696: 173 und 1725: 107, n. XLI/t. 188, f. 1/t. 211, f. 1 unter dem Namen "*Solani fructu fruticosa, foliis laurinis oblongis integris subtùs hirsutis flore minore purpureo*" [2]) Sloane publizierte, nur noch Exemplare von *Rauvolfia tomentosa* N. J. Jacquin vorhanden sind, kann doch kaum ohne weiteres dahingehend interpretiert werden, dass lediglich diese Art in der damaligen Zeit im Chelsea-Garden kultiviert wurde. Dass bereits zur Zeit von Philip Miller und Sir Hans Sloane auch die zweite von Linnaeus anerkannte *Rauvolfia*-Art in England bekannt und mit grösster Wahrscheinlichkeit zum mindesten im Hampton Court-Garden kultiviert wurde, mag schon aus der Tatsache entnommen werden, dass Plukenet 1696: t. 266, f. 2 nach Ausweis seines Herbars (cf. A. B. Rendle 1937: 109) diese

zweite Art kannte und unter dem Polynom "*Arbor Sycophora Jamaicensis, foliis minoribus*" Plukenet veröffentlichte. Abgesehen davon erklärte Philip Miller 1752 selbst, dass er im Chelsea-Garden beide von Plumier 1703: 19/t. 40 genannten Arten in Kultur besitze. Die Argumentation von A. B. Rendle 1937: 107, es müsse sich bei diesen beiden im Chelsea-Garden kultivierten Exemplaren um ein und dasselbe Taxon handeln, da Philip Miller die Samen beider Arten von Robert Millar, der von 1734-1740 für Sloane und andere auf den westindischen Inseln und in Zentralamerika sammelte, aus Cartagena erhalten habe und *Rauvolfia tetraphylla* L. (= *Rauvolfia nitida* [N. J. Jacquin ex] L. bei A. S. Rao 1956: 334, n. 28) in Kolumbien fehle, ist doch kaum über jeden Zweifel erhaben, umso weniger, wenn man in Betracht zieht, dass Cartagena in der damaligen Zeit der Ausfuhrhafen für das westindische Gebiet war. Diese Fragen dürften jedoch lediglich historisches Interesse haben. Man wird bei der Interpretation der beiden Linnaeus'schen *Rauvolfia*-Arten doch kaum die Tatsache übergehen, dass Linnaeus 1753: 208, n. 1 seine frühere "*Rauvolfia*" L. als übergeordnete, beide aufgeführten Varietäten repräsentierende Sammelart interpretiert und bezüglich der beiden Varietäten sich ausschliesslich auf Plumier 1703: 19/t. 40 beruft. Linnaeus 1738: 75 interpretierte die "*Rauvolfia tetraphylla angusti-folia*" Plumier offenbar noch als Typus der Art und ordnete die "*Rauvolfia tetraphylla latifolia*" Plumier als var. α dem Typus unter. Ausserdem weist auch die Wahl des Epitheton "*tetraphylla*" bei Linnaeus 1753: 208, n. 1 eindeutig auf Plumier 1703: 19. Zur Klärung der taxonomischen Zugehörigkeit der beiden von Linnaeus 1753: 208, n. 1 unterschiedenen Taxa darf man demzufolge doch kaum Linnaeus beiziehen, der die betreffenden Arten gar nicht bzw. lediglich aus zwei Abbildungen (Plumier 1703: t. 40, infra [Détailreproduktion der Blüten] und Ehret apud L. 1738: t. 9 [Habitusbild eines Zweiges]), vielleicht der Erinnerung an ein anno 1736 im Chelsea-Garden kultiviert gesehenes Exemplar kannte. Anderseits hatte Charles Plumier (1646-1704), der im Auftrage des französischen Königs, Louis XIV (1643-1715), das Gebiet der westindischen Inseln, hauptsächlich Haiti botanisch bereiste, Gelegenheit, die betreffenden Pflanzen zu beobachten, zu zeichnen und auch zu sammeln.

Die erste Art bei Plumier 1703: 19 "*Rauvolfia tetraphylla angusti-folia*" Plumier erscheint bei Linnaeus 1738: 75 als Typusvarietät, bei Linnaeus 1753: 208, n. 1 als Varietät [α.] ohne irgend einen weiteren Zusatz, die zweite Plumier'sche Art, "*Rauvolfia tetraphylla lati-folia*" Plumier, ebenso kommentarlos als Varietät α. bzw. β. ohne nähere Bezeichnung. Die Darstellung der *Rauvolfia tetraphylla* L. bei Linnaeus 1753: 208, n. 1 weicht demzufolge nur insofern von der Auffassung bei Plumier 1703: 19 ab, als Linnaeus die beiden Plumier'schen *Rauvolfia*-Arten lediglich als Varietäten anerkennt. *Rauvolfia tetraphylla* L. und die beiden von Linnaeus 1753: 208, n. 1 als Varietäten dazu gezogenen Plumier'schen Arten blieben für Linnaeus bis anno 1758 weitgehend literarische Arten. Erst in diesem Jahre nach Ankauf des Jamaica-Herbariums von Patrick Browne (1720-1790), der sich von 1746-1755 als Arzt auf Jamaica aufgehalten hatte, gelangte Linnaeus in den Besitz eines Herbarbeleges einer Art aus der Gattung *Rauvolfia* L. Dieser Beleg im Linnaeus'schen Herbar in den Sammlungen der Linnean Society in London (cf. B. D. Jackson 1912: 125, n. 293; Savage 1945: 43, n. 293. 4) wurde von Daniel Carl Solander (1736-1782), einem Vorzugsschüler von Linnaeus, der eine Grosszahl der P. Browne'schen Herbarbelege beschriftete (cf. J. E. Smith 1821: 42-44), als "*Rauvolfia tetraphylla*" bezeichnet. (vgl. die Abbildungen bei A. B. Rendle 1937: t. 3; A. S. Rao 1956: t. 3, f. 4). Allerdings darf wohl kaum Solander für diese Interpretation verantwortlich gemacht werden. Solander entnahm diese Auslegung einer handschriftlichen Bemerkung von Linnaeus, der in seinem Handexemplar der "History of Jamaica" von Patrick Browne 1756: 180, n. 1 bei "*Rauvolfia fruticosa, foliis verticillatis tenuissime villosis*" das Epitheton "*tetraphylla*" zufügte (cf. A. B. Rendle 1937: 108-109). Linnaeus dürfte ziemlich bald darauf auf seinen Irrtum bezüglich der taxonomischen Interpretation der "*Rauvolfia fruticosa, foliis verticillatis tenuissime villosis*" P. Browne aufmerksam geworden sein, zum mindesten aber, nachdem er in den Besitz eines Beleges von *Rauvolfia nitida* [N. J. Jacquin 1760: 14, n. 1, nomen nudum ex] L. 1762: 303, n. 1 [3]) gelangt war. (cf. et B. D. Jackson 1912: 125, n. 293; Savage 1945: 43, n.293. 1 [4])).

Es erscheint naheliegend, dass N. J. Jacquin (1727-1817) nach seiner Rückkehr von seiner während der Jahre 1754-1759 im Auftrage des damaligen Kaisers des Deutschen

Reiches Franz I Stefan (1745-1765) in Westindien durchgeführten Forschungsreise an Linnaeus unter anderen auch einen Beleg seiner *Rauvolfia nitida* N. J. Jacquin übermittelte. In dieser Zeit mag Linnaeus auch die Beschriftung "*Rauvolfia tetraphylla*" von Solander auf dem Herbarbeleg von Patrick Browne korrigiert haben, indem er das nomen specificum "*tetraphylla*" durchstrich und durch das Epitheton "*canescens*" ersetzte. Ausserdem konnte sich Linnaeus jetzt nach Erscheinen der durch Johannes Burmann (1707-1779) besorgten und stark erweiterten Neuauflage von Plumier's "Nova Plantarum Americanarum Genera" (Plumier [ed. Burmann] 1760: 232-233/ t. 236, f. 1 & f. 2) anhand der Tafel 236, f. 1 & f. 2 [vgl. auch die Reproduktion dieser Tafel bei A. S. Rao 1956: t. 3, f. 1] über die beiden von Plumier 1703: 19 aufgestellten Arten orientieren. Immerhin besteht auch die Möglichkeit, dass Linnaeus die beiden Plumier'schen *Rauvolfia*-Arten bereits während seines Aufenthaltes im Hause von Johannes Burmann in Amsterdam von Anfang Juli 1735 bis zum 13. September 1735 anhand der Kopien von Claude Aubriet (1665-1742) nach den Plumier'schen Originalzeichnungen zu studieren Gelegenheit hatte. Diese waren durch die Vermittlung von Hermann Boerhaave (1668-1738) zusammen mit einem Teil der Plumier'schen Manuskripte von Paris nach Holland und zum Zwecke einer Veröffentlichung in die Hände von Johannes Burmann gelangt. Diese Erkenntnisse von Linnaeus finden ihren Niederschlag in der klaren Darstellung der beiden in Frage stehenden Arten bei Linnaeus 1762: 303, n. 1 & n. 2:

1. Rauvolfia glaberrima nitida nitidissima *Jacq.* amer. 14 Rauvolfia *Hort. cliff. 75. t. 9.*
   Rauvolfia tetraphylla angustifolia. *Plum. gen. 19. ic. 236. f. 1.*
   Habitat in America *meridionali.*
2. Rauvolfia subpubescens. canescens
   Rauvolfia fruticosa, foliis verticillatis tenuissime villosis. *Brown. jam. 180.*
   Rauvolfia tetraphylla latifolia. *Plum. gen. 19. ic. 236, f. 2.*
   Solani fructu fruticosa, foliis laurinis oblongis integris subtus hirsutis. *Sloan. jam. 173. hist. 2. p. 107. t. 211, f. 1. Raj. dendr. 75.*
   Arbor Sycophora jamaicensis, foliis minoribus. *Pluk. phyt. 266. f. 2.*
   Habitat in Jamaica. ♄
   Rami subtomentosi. Folia subtus potius tomentosa, quam hirsuta. [5])

Im Anschluss hieran mag noch die von A. B. Rendle 1937: 109 aufgeworfene Frage, warum Linnaeus 1762: 303 das früher verwendete Epitheton "*tetraphylla*" änderte und beide 1762: 303 als Arten gewertete Taxa mit neuen Namen belegte, kurz beleuchtet sein.

Bereits im vorstehenden wurde darzulegen versucht, dass bei Linnaeus 1753: 208, n. 1 das Binomen *Rauvolfia tetraphylla* L. den beiden als Varietäten gewerteten Plumier'schen Arten übergeordnet ist. Das nomen specificum "*tetraphylla*" hatte demzufolge für Linnaeus nur eine erweiterte Bedeutung und bezeichnete sowohl die "*Rauvolfia tetraphylla angusti-folia*" Plumier als auch die "*Rauvolfia tetraphylla lati-folia*" Plumier, ohne durch die eine oder durch die andere der Plumier'schen Arten typisiert zu sein. So hatte Linnaeus 1762: 303 seiner Ansicht nach keine andere Wahl, als das frühere Epitheton ganz fallen zu lassen und für die beiden neuen Spezies auch neue nomina specifica zu wählen. Dass jedoch auch die beiden von Linnaeus 1762: 303, n. 1 & n. 2 unterschiedenen Arten nichts anderes sind, als die beiden 1753: 208, n. 1 als Varietäten unterschiedenen Taxa von Plumier 1703: 19 wird aus den Hinweisen auf diese in der Synonymie von *Rauvolfia nitida* N. J. Jacquin ex L. und *Rauvolfia canescens* L. deutlich.

1. *Rauvolfia tetraphylla* L. 1753: 208, n. 1 [*α.*].
   ≡ "*Rauvolfia tetraphylla angusti-folia*" Plumier 1703: 19/t. 40, infra;
   = "*Rauwolffia foliis lanceolatis, nervosis*" Burmann in Plumier 1760: 232/t. 236, f. 1;
   ≡ "*Rauvolfia*" L. 1738: 75, ex parte;
   ≡ *Rauvolfia angustifolia* R. A. Salisbury 1796: 146, n. 1, nomen illeg., "Angustifolia";
      = "*Arbor Sycophora jamaicensis, foliis minoribus*" Plukenet 1696: t. 266, f. 2;
      = *Rauvolfia nitida* N. J. Jacquin 1760: 14, n. 1, nomen nudum; L. 1762: 303, n. 1, cum ref. ad Plumier 1703: 19; L. 1738: 75/t. 9; Burmann in Plumier 1760: t. 236, f. 1; N. J. Jacquin 1763: 47, n. 1, cum descr., non Lamarck 1793: 304, n. 3389/t. 172, f. 1;
      ≡ *Rauvolfia nitidissima* Steudel 1821: 682, pro syn. *R. nitidae;*

= *Rauvolfia lanceolata* A. DECANDOLLE apud A.-P. DECANDOLLE 1844: 337, non GRISEBACH 1864: 408, nomen nudum.

2. *Rauvolfia tomentosa* N. J. JACQUIN 1760: 14, n. 2, nomen seminudum, cum ref. ad P. BROWNE 1756: 180, n. 1; N. J. JACQUIN 1763: 47, n. 2, cum descr.
   ≡ *"Rauvolfia fruticosa, foliis verticillatis tenuissime villosis"* P. BROWNE 1756: 180, n. 1;
   ≡ *Rauvolfia canescens* L. 1762: 303, n. 2;
   ≡ *Rauvolfia subpubescens* L. 1771: 345;
   = *"Solani fructu fruticosa, foliis laurinis oblongis integris subtus hirsutis, flore minore purpureo"* SLOANE 1696: 173; RAY 1704b: 75; SLOANE 1725: 107, n. XLI/t. 188, f. 1/t. 211, f. 1;
   = *"Rauvolfia tetraphylla lati-folia"* PLUMIER 1703: 19/t. 40, infra;
   ≡ *"Rauvolfia"*, var. *α. "Rauvolfia tetraphylla lati-folia"* (PLUMIER, pro specie) L. 1738: 75;
   ≡ *Rauvolfia tetraphylla* L., var. *β. "Rauvolfia tetraphylla lati-folia"* [PLUMIER, pro specie] L. 1753: 208, n. 1 *β*.;
   ≡ *"Rauwolffia foliis ovatis, venosis"* BURMANN in PLUMIER 1760: 232-233/t. 236, f. 2;
   = *Rauvolfia hirsuta* N. J. JACQUIN 1760: 14, n. 3, nomen nudum;
   N. J. JACQUIN 1763: 48, n. 3, cum descr.;
   = *Rauvolfia heterophylla* ROEMER & SCHULTES in L. 1819: 805, n. 9, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia odontophora* HEURCK & MUELLER-ARGOVIENSIS apud HEURCK 1871: 150, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia mollissima* MARKGRAF 1924: 119, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia canescens* L., var. *glabra* MUELLER-ARGOVIENSIS 1860: 395, fide A. S. RAO 1956: 285, n. 3, in syn.;
   ≡ *Rauvolfia hirsuta* N. J. JACQUIN, var. *glabra* (MUELLER-ARGOVIENSIS, pro var. *R. canescentis*) WOODSON apud WOODSON & SEIBERT 1939: 299;
   = *Rauvolfia canescens* L., var. *tomentosa* (N. J. JACQUIN, pro specie) MUELLER-ARGOVIENSIS 1860: 395, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia canescens* L., var. *intermedia* MARKGRAF 1924: 115, in clave, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia canescens* L., var. *typica* MARKGRAF 1924: 115, in clave, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia latifolia* A. DECANDOLLE apud A.-P. DECANDOLLE 1844: 339, var. *minor* MUELLER-ARGOVIENSIS 1860: 396, ex parte, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *Rauvolfia heterophylla* ROEMER & SCHULTES in L., var. *puberula* ASA GRAY 1861: 187, nomen nudum, fide A. S. RAO 1956: 285, n. 3, in syn.;
   = *"Solanum frutescens Brasilianum folio Capsici baccis rubris"* HERMANN [ed. WARTON] 1689: 377, fide SLOANE 1725: 107, n. XLI, sed vix huc pertinens;
   = *"Arbor Sycophora jamaicensis, foliis minoribus"* SLOANE 1725: 107, n. XLI, pro syn.; L. 1762: 303, n. 2, pro syn., non PLUKENET 1696: t. 266, f. 2, fide A. B. RENDLE 1937: 109;
   = ? *"Solanum Capsicum dictum arborescens Americanum nigrum, foliis obscurius virentibus laevioribusq.; & magis obtusis seu seseli Aethiopici frutescentis"* BREYN 1678: t. 2, fide SLOANE 1725: 107, n. XLI, sed pro specie dubia in syn.

ZITIERTES SCHRIFTTUM:

(Anmerkung: Autoren, welche in der nachfolgenden Liste nicht angeführt erscheinen, sind bereits in der Liste des zitierten Schrifttums bei H. P. FUCHS 1958: 49-52 aufgeführt.)

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FUSS-NOTEN

[1]) Plumier dedizierte die von ihm 1703: 19 neu aufgestellte Gattung dem Augsburger Arzt und Botaniker Leonhard Rauwolf (± 1540-1596), der in den Jahren 1573-1576 den vorderen Orient bereiste, mit den folgenden

Worten: "Leonardus Rauvolfius floruit circa annum 1583. Patriam habuit Augustam Drusi. In orientales regiones navigare in animum suum induxit, et anno 1573 Massiliae navim ingressus in Orientem venit, ubi saepe cum praesentaneo vitae discrimine peragravit. Scripsit itinerarium in Syriam, quod in sex partes distinxit, in quibus plurima rara de omni medica materia observata tradit, additis variis plantarum, animalium aliarumque rerum iconibus. Laugingae, ann. 1583, in 4°." (Burmann in Plumier 1760: 232).

Leonhard Rauwolf, geboren um 1540 als Sohn eines Kaufmanns in Augsburg, immatrikulierte sich am 6. November 1556 an der Universität in Wittenberg und schloss sein Studium der Medizin nach Aufenthalten in Italien und an den Universitäten Montpellier und Valence an letzterer ab mit dem Erwerb des Doktordiploms anno 1562. Nach einem Reisejahr durch Italien (Verona, Bologna, Parma und Florenz) kehrte Rauwolf über den Gotthard, Luzern, Zürch, Basel und den Schwarzwald nach seiner Vaterstadt zurück. Nach seiner Verehelichung mit Regina Jung, einer Tochter des 1559 verstorbenen Arztes Ambrosius Jung, d. J., soll sich Rauwolf während einiger Jahre in Aichach und später in Kempten aufgehalten haben, kehrte jedoch anno 1571 wieder nach Augsburg zurück, von wo er nach zweijähriger Arztpraxis am 18. Mai 1573 zu seiner Orientreise aufbrach. Nach seiner Rückkehr am 12. Februar 1576 erhielt Rauwolf in Augsburg als Arzt eine angesehene Stellung, vermutlich als Vorsteher des Pestspitales, doch dauerte diese Anstellung lediglich bis 1588, in welchem Jahre Rauwolf wegen kirchlicher Differenzen mit dem Geheimen Rath seinen Dienst quittieren musste. Von Augsburg begab sich Rauwolf nach Linz, wo er vom 28. Juli 1588 bis zum 13. Juli 1596 als Arzt tätig war. Mit dem von der Landschaft Linz gegen die in Ungarn eingedrungenen Türken gesandten Kriegsvolk begab sich Rauwolf als Feldscher nach Ungarn, wo er am 3. September bei der Belagerung von Hatvan (Comitat Heves) östlich Budapest an Ruhr erkrankte und am 13. September 1596 während der Belagerung von Vác (Comitat Nógrád) an der Donau nordöstlich Budapest vom Tod ereilt wurde.

Die von Leonhard Rauwolf in den Jahren 1560-1563 in Frankreich, Savoyen, der Schweiz und Italien sowie von 1573-1575 auf seiner Orientreise zusammengebrachte Pflanzensammlung umfasst vier Foliobände mit zusammen 972 Pflanzen und befindet sich heute im Besitz der Universitätsbibliothek in Leiden. (Vergleiche die ausführliche Darstellung des Lebens und der Reise von Leonhard Rauwolf bei Fr. Babinger 1912: [148]-161.)

Der Titel der erstmalig anno 1581 zu Augsburg veröffentlichten Reisebeschreibung in ihrer dritten Ausgabe, auf die sich Burmann in Plumier 1760: 232 bei seiner Dedizierung bezieht, liest sich wie folgt: *Leonharti Rauwolfen/ der Artzney Doctorn/ und bestelten Medici zů Augspurg. — Aigentliche beschreibung der Raiss/ so er vor diser zeit gegen Auffgang inn die Morgenländer/ fürnemlich Syriam, Indaeam, Arabiam, Mesopotamiam, Babyloniam, Assyriam, Armeniam etc. nicht ohne mühe unnd grosse gefahr selbs volbracht: neben vermeldung etlicher mehr gar schön frembden und aussenländischen Gewächsen/ sampt iren mit angehenckten lebendigen contarfacturen/ unnd auch anderer denckwürdiger sachen/ die alle er auff solcher erkundiget/ gesehen und obseruiert hat. — Alles in Vier underschidliche Thail mit sonderem fleiss abgethailet/ unnd ein jeden weitter in seine sondere Capitel/ wie dero innhalt in zů end gesetztem Register zůfinden.* — In costen und verlag Georgen Willers. — *Mit Röm. Kay. May. Freyheit nit nach zůttrucken.* — 1583 : 16 pp. innum. [tit.; dedic.]; 1-487; 12 pp. innum. [tit.; dedic.]; 42 t. [= 4. Teil : Getruckt zů Laugingen/ durch Leonhart Reinmichel/ in verlegung Georgen Willers 1583.].

[2]) Nach den Angaben von A. B. Rendle 1937: 109 gehört das heute im Herbarium von Sir Hans Sloane aufbewahrte Exemplar zu *Rauvolfia tomentosa* N. J. Jacquin [= *Rauvolfia tetraphylla* L. im Sinne von A. B. Rendle 1937: 109 und A. S. Rao 1956: 285, n. 3]. Sloane 1725: 107, n. XLI erklärt im Anschluss an die Diagnose seiner *"Solani fructu fruticosa, folijs laurinis oblongis integris subtus hirsutis, flore minore purpureo"* Sloane: "I found it in Jamaica, but where I do not certainly remember. This Description is taken from the dryed Sample I found in my Books." Etwas suspekt mutet immerhin die Tatsache an, dass Sloane 1725: 107, n. XLI [und bereits früher 1696: 173] in seinem Polynom die Pflanze als mit *"flore purpureo"* beschreibt, während nach A. S. Rao 1956: 286 die Blüten von *Rauvolfia tomentosa* N. J. Jacquin [= *Rauvolfia tetraphylla* L. bei A. S. Rao 1956: 285, n. 3] weiss sind. Allerdings sollen — nach freundlicher Mitteilung von Herrn Dr. H. Huerlimann, Basel — bei Exemplaren von *Rauvolfia tomentosa* N. J. Jacquin an sonnigen

Standorten die später weissen Blüten bei der Anthese oft etwas rot überlaufen sein.

[3]) A. B. Rendle 1937: 108 und ebenso A. S. Rao 1956: 334, n. 28 betrachten die erste Veröffentlichung der *Rauvolfia nitida* N. J. Jacquin 1760: 14, n. 1 als rite mit Diagnose versehen. N. J. Jacquin 1760: 14 publizierte gleichzeitig mit der genannten Art noch zwei weitere aus der Gattung *Rauvolfia* L. in der folgenden Art und Weise:

nitida	1. Rauvolfia nitidissima.
tomentosa	2. Rauvolfia tomentosa. *Brown. Jam. t. 1. p. 180.*
hirsuta	3. Rauvolfia hirsuta.

Man darf wohl kaum die Wiederholung des nomen specificum allein (auch wenn dieses wie bei *Rauvolfia nitida* N. J. Jacquin in den Superlativ gesetzt wird) als gültige Beschreibung ansehen, da sonst mit gleicher Konsequenz alle nomina nuda mit einem morphologischen Merkmale bezeichnenden Epitheton als rite publiziert angesehen werden müssten. Die drei im vorstehenden genannten Arten wurden von N. J. Jacquin erst 1763: 47 mit einer tatsächlichen Beschreibung veröffentlicht. In der Zwischenzeit erschien jedoch der erste Band der zweiten Auflage der "Species Plantarum" von Linnaeus 1762: 303, n. 1, wo die *Rauvolfia nitida* N. J. Jacquin 1760: 14, n. 1, nomen nudum mit Hinweisen auf frühere Beschreibungen (Linnaeus 1738: 75 und Plumier 1703: 19 bzw. Burmann in Plumier 1760: 232) und ebenso Abbildungen (Ehret apud Linnaeus 1738: t. 9, Plumier 1703: t. 40 sowie Burmann in Plumier 1760: t. 236, f. 1) veröffentlicht erscheint.

[4]) Ausser *Rauvolfia nitida* [N. J. Jacquin ex] L. und *Rauvolfia canescens* L. liegen im Herbarium von Linnaeus noch zwei weitere von unbekannter Hand mit *"Surin."* bezeichnete Belege aus der Gattung *Rauvolfia* L. (cf. Savage 1945: 43, n. 293, 2. & 3.). An und für sich besteht die Möglichkeit, dass Linnaeus diese beiden Herbarbelege von Jean Frédéric François Louis Allamand aus Ormont-Dessus oberhalb Aigle (Ktn. Waadt) (1735 [an 1734 ?] — post 1793) erhalten hatte, der zusammen mit Daniel Rolander (1725-1793) in den Jahren 1755-1770 in Holländisch Guiana sammelte und Linnaeus von 1756-1771 und auch noch später Pflanzen aus jenen Gebieten übermittelte. Im Gegensatz dazu erhielt Linnaeus von Daniel Rolander gesammelte Exemplare nicht durch diesen selbst, sondern einerseits durch Colonel Carl Gustav Dahlberg, der nach dem Besuch seines Vaterlandes Schweden anno 1754 Rolander einlud, mit ihm nach Surinam zu reisen, anderseits durch den Mäzen Rolander's, den Grafen Charles de Geer (1720-1778), der Rolander's Reise nach Westindien teilweise finanzierte, und dem Rolander nach seiner Rückkehr nach Schweden 1771 zum grossen Leidwesen von Linnaeus die ganze in Surinam zusammengebrachte Sammlung übergab, vielleicht auch durch den damaligen schwedischen Regenten, Gustav III. (1771-1792), dem Linnaeus 1775: 12/17/18/t. innum. die Gattung *Gustavia* L., nomen gener. conserv. dedizierte. Suspekt bleibt allerdings, warum Linnaeus bei der Bearbeitung dieses Materiales aus Surinam (cf. Linnaeus [respondente J. Alm] 1775: [1]-19/t. innum. resp. 1785: [249]-267/t. 5) diese Pflanzen weder beschreibt noch nur auch erwähnt. Hat Linnaeus diese mit grösster Wahrscheinlichkeit *Rauvolfia ligustrina* Roemer & Schultes in L. 1819: 805, n. 8 zugehörigen Belege erst nach Veröffentlichung seiner "Plantae surinamenses" erhalten?

[5]) Es geht auch hieraus wieder klar hervor, dass, wie bereits früher dargelegt (cf. H. P. Fuchs 1955: 63), als eigentliche, auf Herbarbelegen begründete Linnaeus'sche Diagnosen lediglich die kursiv gesetzten Anmerkungen am Schluss der einzelnen Arten gewertet werden können.

THE "CLASSES" OF RAFINESQUE AND THE MODERN BIOSYSTEMATICS

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Both the first and the most ingenious system of descriptive biology is undoubtedly that of C. S. Rafinesque-Schmaltz; it was introduced in 1814:

"Mon premier devoir a été de donner un nom à la Science que j'entreprends d'illustrer, j'ai donc choisi le nom de Somiologie, qui signifie la Science des Corps vivans, pour désigner collectivement la Botanique et la Zoologie unies entr'elles et régies par des loix pareilles; j'ai désigné en même tems le groupe immense des Animaux et Végétaux par le surnom d'Empire Somiologique ou organique, reservant celui d'Empire minéralogique ou inorganique aux Elémens et Minéraux." (Pp. 6-7 of his *Précis*.)

Two pages later, Rafinesque said:

"... j'assimile la classification des Plantes à celle des Animaux et je range tous ces Corps en 20 classes dont 10 appartiennent à chaque Règne, j'en ai déjà publié le tableau comparatif dans le 1. numero de mon Journal [i.e., *Specchio delle Scienze o Giornale Enciclopedico di Sicilia*, 1814], voici celui des Sciences qui en émanent." (Antea, pp. 8-9.)

Our Table 1 shows his "tableau comparatif des Sciences" slightly modified and with the addition of proper names for the respective taxa. While the animal portion of Rafinesque's epitome may be quite easily understood even by a zoological layman, the botanical portion has difficulties at first sight when compared with the modern system of plants. The plant system of Rafinesque seems to be strange enough to the modern taxonomist's mind, although it is essentially, as demonstrated in our Table 2, one of the oldest *natural* systems.

Rafinesque's concept of somiology corresponds, in fact, to that of the more recent plant and animal taxonomy. But "taxonomic and systematic investigations have proceeded", to use the words applied by Heywood, "beyond the essentially descriptive phases and have ventured into the fields variously known as experimental taxonomy, genecology, biosystematics and other such disciplines". What is the modern *biosystematics*? It differs from classical taxonomy by using not only morphological analysis, but also and to a large degree, the methods of many other biological disciplines, especially embryology, physiology, genetics, biochemistry, and the so-called "parabiology".

The complex of parabiology (Schilder 1952) includes disciplines such as bionomics, ecology and chorology (biogeography). The true significance of the terms *bionomics* and *ecology* being often misunderstood, we have already redefined them (Paclt 1957) as follows: bionomics — concerned with a single species; ecology — concerned with the biocenosis. Now, we may show the concept of both main branches in a more complete schema:

1. The reciprocal influence of one organ upon another ... S y m p h y s i o l o g y (Gams).

2. Relations between individuals of one species and the environment ... B i o n o m y (Dollo).

Synonyms: *mesology* *) (Bertillon senior), *autecology* (Schroeter), *genecology* (according to the definition of Jackson 1949, not to that of Henderson 1949); *zoonomy* of Erasmus Darwin 1794 also belongs here (opposite of the hypothetic *phytonomy*). See also Paclt 1957.

3. Relations between two or more species and the environment ... M e s e c o l o g y (Kinne).

4. Relations between some biocenosis and the environment ... E c o l o g y (Haeckel).

Synonyms: *synecology* (Schroeter), etc. (see Paclt 1957).

Owing to the frequent necessity in modern practice to take into consideration, in equal degree, physiology on one hand, and bionomics or mesecology on the other, Kinne 1957 proposed to designate that field of research as "physiologische Oekologie" (= écophysiologie of French authors). *Physiologia ancilla bionomiae et vice versa.* The field in question may thus trangress the apparent boundary between the so-called "parabiology" and "eubiology" of Schilder.

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Table 1. The system of organisms by Rafinesque

SOMIOLOGIE

I. Règne: ZOOLOGIE	II. Règne: BOTANIQUE
1. Classe MASTODOLOGIE [1] *Mastodia*	1. Classe ELTROLOGIE *Eltrogynia*
2. Classe ORNITHOLOGIE *Ornithia*	2. Classe MÉSOLOGIE *Mesogynia*
3. Classe ERPÉTOLOGIE *Erpetia*	3. Classe ENDOLOGIE *Endogynia*
4. Classe ICHTH(!)YOLOGIE *Ichtyolia*	4. Classe SYMPHOLOGIE *Symphogynia*
5. Classe PLAXOLOGIE [2] *Plaxolia*	5. Classe ANGIOLOGIE *Angiogynia*
6. Classe ENTOMOLOGIE *Entomia*	6. Classe GYMNOLOGIE *Gymnogynia*
7. Classe MALACOLOGIE [3] *Malacosia*	7. Classe PHANÉROLOGIE *Phanerogynia*
8. Classe HELMINTHOLOGIE *Helminthosia*	8. Classe CRYPTOLOGIE *Cryptogynia*
9. Classe PROCTOLOGIE [4] *Proctolia*	9. Classe ALGOLOGIE *Algolia*
10. Classe POLYPOLOGIE [5] *Polypia*	10. Classe MYCOLOGIE *Mycolia*

*) Not to be confounded with the "mésologie" of Rafinesque (for which see Table 1).

[1]) Discipline dealing with mammals, the mastozoology (less correctly theriology, or mammalogy).

[2]) Discipline dealing with crustaceans, the carcinology (not to be confounded with "carcinology" = oncology).

[3]) Discipline dealing with molluscs, the malacozoology (conchology).

[4]) Discipline dealing with tunicates.

[5]) Discipline dealing with Coelenterata.

Table 2. Concordance Rafinesque — Modern Authors

Classes proposed by Rafinesque	Characters becoming predominant in the series under consideration	Modern series included
1. *Eltrogynia* (derivation from eleutheros, free)	*choripetalous (or apetalous) flowers:* gynoecium free (opposite to the Class 4)	Parietales p.p.; Opuntiales, Malvales, Rhamnales, Sapindales, Geraniales, Pandales, Sarraceniales, Ranales, Rosales, Rhoeadales, Centrospermae, Polygonales, Balanophorales, Aristolochiales, Santalales, Proteales, Podostemonales, Verticillatae, Piperales, Hydrostachyales, Salicales, Garryales, Myricales, Balanopsidales, Leitneriales, Juglandales, Julianiales, Batidales, Fagales and Urticales.
2. *Mesogynia*	*sympetalous flowers:* hypogynous	Contortae, Tubiflorae, Plantaginales, Ebenales, Diapensiales, Ericales, Primulales and Plumbaginales.
3. *Endogynia*	*sympetalous flowers:* epigynous	Rubiales, Cucurbitales and Campanulatae.
4. *Symphogynia*	*choripetalous flowers:* gynoecium fused together with the floral axis (opposite to the Class 1)	Myrtiflorae + + Umbelliflorae; Parietales p.p.
5. *Angiogynia*	*floral pentamery:* epigynous flowers	Microspermae + + Scitamineae.
6. *Gymnogynia*	*floral pentamery:* hypogynous flowers	Liliiflorae + + Farinosae.
7. *Phanerogynia*	*floral oligomery, or gymnospermy*	Glumiflorae, Triuridales, Helobiae, Pandanales, Principes, Synanthae and Spathiflorae; GYMNOSPERMAE.
8. *Cryptogynia*		PTERIDOPHYTA + + BRYOPHYTA.
9. *Algolia*		"ALGAE".
10. *Mycolia*		MYCETES (FUNGI).

NEW COMBINATIONS IN MOSSES IV [1])

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Acrocryphaea leiboldii (C. Muell.) Wijk et Marg.

Basionym: *Cryphaea leiboldii* C. Muell., Linnaea 18: 680. 1845.

Aongstroemia filiformis (P. Beauv.) Wijk et Marg.

Basionym: *Dicranum filiforme* P. Beauv., Prodr. 53. 1805.

Bryoerythrophyllum barbuloides (Herz.) Wijk et Marg.

Basionym: *Erythrophyllum barbuloides* Herz., Hedwigia 65: 154. 1925.

Callicostella depressa (Hedw.) Jaeg. var. *rubella* (Besch.) Wijk et Marg.

Basionym: *Hookeria herminieri* Schimp. var. *rubella* Besch., Ann. Sc. Nat. Bot. ser. 6, 3: 233. 1876.

Dicnemoloma pallidum (Hook.) Wijk et Marg.

Basionym: *Leucodon pallidus* Hook., Musci Exot. 2: 12. *172.* 1820.

Dicranoloma robustum (Hook. f. et Wils.) Par. var. *attenuatum* (Hook. f. et Wils.) Wijk et Marg.

Basionym: *Dicranum setosum* Hook. f. et Wils. var. *attenuatum* Hook. f. et Wils., Fl. Antarct. 129. *58.* 1844.

Dicranoloma robustum (Hook. f. et Wils.) Par. var. *strictifolium* (Dus.) Wijk et Marg.

Basionym: *Leucoloma muelleri* Dus. var. *strictifolium* Dus., Ark. Bot. 4(1): 34. *9 f. 16.* 1905.

Dicranum speirophyllum Mont. var. *condensatum* (Sull.) Wijk et Marg.

Basionym: *Dicranum sandvicense* Sull. var. *condensatum* Sull., U.S. Expl. Exp. Wilkes Musci 4. 1859.

Dicranum speirophyllum Mont. var. *elongatum* (Sull.) Wijk et Marg.

Basionym: *Dicranum sandvicense* Sull. var. *elongatum* Sull., U.S. Expl. Exp. Wilkes Musci 4. 1859.

Didymodon rigidulus Hedw. ssp. *andreaeoides* (Limpr.) Wijk et Marg.

Basionym: *Grimmia andreaeoides* Limpr., Laubm. Deutschl. 1: 776. 1889.

Ditrichum lineare (Sw.) Lindb. var. *lamyi* (Boul.) Wijk et Marg.

Basionym: *Aongstroemia lamyi* Boul., Fl. Crypt. Est Muscin. 553. 1872.

Ditrichum pusillum (Hedw.) Hamp. var. *glaciale* (Schimp.) Wijk et Marg.

Basionym: *Trichostomum tenue* Hedw. var. *glaciale* Schimp., Coroll. 29. 1856.

Drepanocladus aduncus (Hedw.) Warnst. var. *schimperi* (San.) Wijk et Marg.

Basionym: *Hypnum aduncum* Hedw. var. *schimperi* San., Bot. Centralbl. 4 (Beil. 2): 19. 1880.

Drepanocladus aduncus (Hedw.) Warnst. ssp. *barbeyi* (Ren. et Card.) Wijk et Marg.

Basionym: *Hypnum barbeyi* Ren. et Card., Bull. Herb. Boiss. 2: 32. 1894.

Ectropothecium nitidum Thér. var. *elongatum* (Thér.) Wijk et Marg.

Basionym: *Ectropothecium distichellum* Thér. var. *elongatum* Thér., Bull. Ac. Int. Géogr. Bot. 20: 103. 1910.

Encalypta rhabdocarpa Schwaegr. var. *trachymitria* (Rip.) Wijk et Marg.

Basionym: *Encalypta trachymitria* Rip., Rev. Bryol. 4: 51. 1877.

Funaria calcarea Wahlenb. var. *alpina* (Amann) Wijk et Marg.

Basionym: *Funaria mediterranea* Lindb. var. *alpina* Amann, Bull. Soc. Vaudoise Sc. Nat. 54: 47. 1921.

Funaria calcarea Wahlenb. var. *sinistra* (Schiffn.) Wijk et Marg.

Basionym: *Funaria mediterranea* Lindb. var. *sinistra* Schiffn., Verh. Zool. Bot. Ges. Wien 69: 338. 1920.

Funaria mathewsii (Hook.) Broth. var. *latifolia* (Hook. f.) Wijk et Marg.

Basionym: *Entosthodon latifolius* Hook. f. in Hook., Icon. Pl. Rar. 3: *245c.* 1840.

Funaria pallescens (Jur.) Broth. var. *mitratus* (Cas. Gil) Wijk et Marg.

Basionym: *Entosthodon pallescens* Jur. var. *mitratus* Cas. Gil, Enum. Distr. Geogr. Muscin. Penins. Iber. 110. 1915.

Funaria papillosa (C. Muell.) Wijk et Marg.

Basionym: *Entosthodon papillosus* C. Muell., Linnaea 43: 358. 1882.

Grimmia donniana Sm. var. *manniae* (C. Muell.) Wijk et Marg.

Basionym: *Grimmia manniae* C. Muell., Flora 70: 223. 1887.

Groutiella goniorrhyncha (Doz. et Molk.) Wijk et Marg.

Basionym: *Schlotheimia goniorrhyncha* Doz. et Molk., Pl. Jungh. 3: 338. 1854.

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[1]) "I" in Taxon 7: 287. 1958, "II" id. 8: 70. 1959, "III" id. 8: 106. 1959.

Groutiella goniorrhyncha (Doz. et Molk.) Wijk et Marg. var. *glaucescens* (C. Muell.) Wijk et Marg.

Basionym: *Macromitrium goniorrhynchum* (Doz. et Molk.) Mitt. var. *glaucescens* C. Muell., Linnaea 36: 39. 1869.

Groutiella laxotorquata (Besch.) Wijk et Marg.

Basionym: *Macromitrium laxotorquatum* C. Muell. ex Besch., Ann. Sc. Nat. Bot. ser. 6. 9: 362. 1880.

Groutiella limbatula (Broth. et Par.) Wijk et Marg.

Basionym: *Macromitrium limbatulum* Broth. et Par., Rev. Bryol. 29: 67. 1902.

Groutiella macrorrhyncha (Bosch et Lac.) Wijk et Marg.

Basionym: *Macromitrium macrorrhynchum* Mitt. ex Bosch et Lac., Bryol. Jav. 1: 133. *111.* 1860.

Groutiella pleurosigmoidea (Par. et Broth.) Wijk et Marg.

Basionym: *Macromitrium pleurosigmoideum* Par. et Broth., Rev. Bryol. 29: 68. 1902.

Groutiella pobeguinii (Par. et Broth.) Wijk et Marg.

Basionym: *Macromitrium pobeguinii* Par. et Broth., Rev. Bryol. 31: 44. 1904.

Groutiella sarcotricha (Broth.) Wijk et Marg.

Basionym: *Macromitrium sarcotrichum* C. Muell. ex Broth., Bot. Jahrb. 24: 242. 1897.

Groutiella schlumbergeri (Schimp.) Wijk et Marg.

Basionym: *Micromitrium schlumbergeri* Schimp. in Besch., Mem. Soc. Sc. Nat. Cherbourg 16: 191. 1872.

Groutiella subgoniorrhyncha (Broth.) Wijk et Marg.

Basionym: *Macromitrium subgoniorrhynchum* Broth. in Rech., Denkschr. Ak. Wiss. Wien Math. Nat. Kl. 84: 391. 1908.

Groutiella thraustophylla (Broth.) Wijk et Marg.

Basionym: *Macromitrium thraustophyllum* C. Muell. ex Broth., Bot. Jahrb. 24: 242. 1897.

Groutiella tomentosa (Hornsch.) Wijk et Marg.

Basionym: *Macromitrium tomentosum* Hornsch., Fl. Bras. 1(2): 21. 1840.

Homalia punctata (Hook. f. et Wils.) Wijk et Marg.

Basionym: *Hookeria punctata* Hook. f. et Wils.. London J. Bot. 3: 550. 1844.

Hymenostomum kunzeanum (C. Muell.) Wijk et Marg.

Basionym: *Weisia kunzeana* C. Muell., Syn. 1: 656. 1849.

Hymenostylium recurvirostre (Hedw.) Dix. var. *latifolium* (Zett.) Wijk et Marg.

Basionym: *Gymnostomum rupestre* Schwaegr. var. *latifolium* Zett., K. Svensk. Vet. Ak. Handl. 13(13): 11. 1876.

Hypnum ravaudii Boul. ssp. *balearicum* (Dix.) Wijk et Marg.

Basionym: *Hypnum balearicum* Dix., Broteria Cienc. Nat. 1: 87. 1932.

Hypnum ravaudii Boul. ssp. *fastigiatum* (Brid.) Wijk et Marg.

Basionym: *Stereodon fastigiatum* Brid., Bryol. Univ. 2: 824. 1827. [Hypnum fastigiatum Brid. l.c. 620 hom. illeg. non H. fastigiatum Brid., Mant. Musc. 185. 1819.]

Hypnum ravaudii Boul. var. *mitodes* (Hag.) Wijk et Marg.

Basionym: *Hypnum mitodes* Hag., Nyt Mag. Naturvid. 38: 340. 1901.

Hypnum ravaudii Boul. ssp. *orthocarpum* (Amann) Wijk et Marg.

Basionym: *Drepanium orthocarpum* Amann, Bull. Murithienne 40: 61. 1919.

Hypnum revolutum (Mitt.) Lindb. var. *meylanii* Wijk et Marg. *nom. nov.*

Typonym: *Drepanium revolutum* (Mitt.) C. Jens. var. *subjulaceum* Meyl. in Amann, Fl. Mouss. Suisse 2: 357. 1919. [non Hypnum revolutum (Mitt.) Lindb. var. subjulaceum Bryhn, 1907.]

Isothecium stoloniferum Brid. var. *cardotii* (Kindb.) Wijk et Marg.

Basionym: *Isothecium cardotii* Kindb. in Macoun, Cat. Canad. Pl. 6: 275. 1892.

Leptodontium viticulosoides (P. Beauv.) Wijk et Marg.

Basionym: *Neckera viticulosoides* P. Beauv., Prodr. 78. 1805.

Mittenothamnium cavifolium (Dix.) Wijk et Marg.

Basionym: *Microthamnium cavifolium* Dix., J. Bot. 53: 21. 1915.

Mittenothamnium microthamnioides (Geh.) Wijk et Marg.

Basionym: *Hypnum microthamnioides* C. Muell. ex Geh., Abh. Naturw. Ver. Bremen 7: 212. 1881.

Oxyrrhynchium hians (Hedw.) Loesk. var. *pachyneuron* (Lindb.) Wijk et Marg.

Basionym: *Hypnum hians* Hedw. var. *pachyneuron* Lindb., Musci Scand. 34. 1879.

Oxyrrhynchium hians (Hedw.) Loesk. ssp. *rappii* (Williams) Wijk et Marg.

Basionym: *Oxyrrhynchium rappii* Williams, Bryologist 30: 102. 1928.

Palamocladium congestum (Hedw.) Wijk et Marg.

Basionym: *Hypnum congestum* Hedw., Spec. Musc. 283. *74 f. 4-7.* 1801.

Palamocladium euchloron (C. Muell.) Wijk et Marg.

Basionym: *Hypnum euchloron* C. Muell., Syn. 2: 464. 1851.

Palamocladium sciureum (Mitt.) Broth. var. *excavatum* (Dix. et Sak.) Wijk et Marg.

Basionym: *Homalothecium excavatum* Dix. et Sak., Bot. Mag. Tokyo 50: 621. 1936.

Pilotrichella pentasticha (Brid.) Wijk et Marg.

Basionym: *Hypnum pentastichum* Brid., Musc. Rec. 2(2): 100. *3 f. 3.* 1801.

Platyhypnidium brotheri (Par.) Wijk et Marg.

Basionym: *Rhynchostegium brotheri* Par., Ind. Bryol. 1124. 1898.

Typonym: *Hypnum julaceum* Broth., Bih. K. Svensk. Vet. Ak. Foerh. 21 Afd. 3(3): 63. 1895. hom. illeg.

Pterygophyllum dentatum (Hook. f. et Wils.) Dix. var. *latifolium* (C. Muell.) Wijk et Marg.

Basionym: *Hookeria denticulata* Hook. f. et Wils. var. *latifolia* C. Muell., Syn. 2: 204. 1851.

Rhachithecium nipponicum (Toyama) Wijk et Marg.

Basionym: *Kibunemuscus nipponicus* Toyama, Act. Phytotax. Geobot. 4: 314. *1.* 1935.

Rhachithecium papillosum (Williams) Wijk et Marg.

Basionym: *Rhabdoweisiella papillosa* Williams, Bull. New York Bot. Gard. 8: 334. *171.* 1914.

Rhacocarpus rehmannianus (C. Muell.) Wijk et Marg.

Basionym: *Harrisonia rehmanniana* C. Muell., Oesterr. Bot. Zeitschr. 47: 391. 1897.

Sematophyllum caespitosum (Hedw.) Mitt. var. *leduceanum* (Mont.) Wijk et Marg.

Basionym: *Hookeria leduceanum* Mont., Ann. Sc. Nat. Bot. Ser. 2, 16: 275. 1841.

Stereophyllum decorum (Mitt.) Wijk et Marg.

Basionym: *Hypnum decorum* Mitt., J. Linn. Soc. Bot. Suppl. 1: 77. 1859.

Tetrodontium brownianum (Dicks.) Schwaegr. var. *ovatum* (Funck) Wijk et Marg.

Basionym: *Tetraphis ovata* Funck in Hoppe, Bot. Taschenb. 1802: 41. 1802.

Trichostomum brachydontium Bruch var. *lutescens* (Lindb.) Wijk et Marg.

Basionym: *Mollia lutescens* Lindb. in Braithw., Brit. Moss Fl. 1: 246. 1887.

Weisia lancifolia (R. Brown ter.) Wijk et Marg.

Basionym: *Dicranum lancifolium* R. Brown ter., Trans. Proc. New Zealand Inst. 29: 458. 1897.

Weisia lancifolia (R. Brown ter.) Wijk et Marg. var. *weymouthii* (R. Brown ter.) Wijk et Marg.

Basionym: *Weisia weymouthii* R. Brown ter., Trans. Proc. New Zealand Inst. 31: 439. 1899.

NEWS AND NOTES

NOMINATION AND FUNCTIONING OF THE SPECIAL COMMITTEES

The procedure followed at the IXth International Botanical Congress in Montreal with regard to the Committee on Fungi and Lichens and its resolutions presented to the Nomenclature Section in session raises issues which we believe to be of importance for the future handling of similar situations. It ought to be considered fundamental that the Special Committees should enjoy a maximum of confidence among the specialists concerned, and this applies especially to the officers of the Committees.

It is not evident that present practice — as it was observed at Montreal — is in accordance with this principle. If it was (and we wish to emphasize that there is no reflection intended on the capacity of the members of the new Committees), it is surely mere coincidence. The resolutions of the old committee were made known officially at the last minute; they were not accepted but were instead referred to a new Committee whose officers and composition were announced without any time being given to discuss this matter of importance, and without previous consultation with the groups concerned, a procedure which excited comment from a number of mycologists and lichenologists inasmuch as representatives of

a minority opinion were appointed in preference to the representatives of the majority. While this last observation may be unjust as far as the intention of the Nomination Committee was concerned, and even if proved to be unjustified by the future activity of the new Committee, it is nevertheless important to avoid any such criticism by assuring that the composition of the Special Committees is subject to previous consultation and discussion among the specialists on the groups concerned.

It is herewith proposed that, at future congresses, a procedure is adopted that provides for ample time to discuss the resolutions of the Special Committees, and also that any changes in the composition of the Committees or the nomination of new Committees should be subject to unhurried discussion among all the specialists present. The nomination of new members or officers of the Committee should not be based on considerations of nationality or geographic location, but on experience in handling nomenclatorial matters and the opinion voiced by those present on the desirability of utilizing, for the purpose of a Special Committee, the experience demonstrated. Obviously, it must also be ascertained whether the respective candidate for a Special Committee is willing and able to participate actively in the work to be done. The election of the chairman and secretary may either be included in this previous discussion or else left to the Committee if it convenes during the Congress. Since experience has shown that the mail vote is generally slow and often produces rather contradictory results, it should be replaced or supplemented by pre-Congress sessions which will need to be planned in such a way as to assure the presentation of the respective resolutions at the time the respective articles or recommendations are discussed in the general Nomenclature Meeting.

We desire that our proposal as contained in the foregoing paragraph be presented to the general session of the Nomenclature Section at the next International Congress.

R. Singer M. Lange

SOLL MAN CHEMISCH CHARAKTERISIERTE TAXA BESONDERS BEZEICHNEN?

Mehr und mehr finden die an Quantität und Qualität zunehmenden Untersuchungsmethoden pflanzlicher Objekte Eingang in die verschiedensten Forschungsrichtungen, sowohl im Bereich der theoretischen Botanik, wo man sich u.a. auch um eingehende Kenntnis infraspezifischer Taxa bemüht, als auch im Bereich der angewandten Botanik, wo man die Pflanzenwelt nach Stoffen von volkswirtschaftlicher Bedeutung durchforscht. Dabei ist es gleichgültig, ob es sich um mechanische, licht- oder elektronenoptische oder chemische Methoden handelt. Jede Verbesserung der Untersuchungsmethoden wird aufgenommen und erweitert die Möglichkeiten zur besseren Kenntnis unserer Pflanzen. In rascher Folge und großer Zahl fallen neue Ergebnisse an, die nicht immer präzise genug nomenklatorisch faßbar erscheinen, besonders dann, wenn man den Blickpunkt nicht nur auf das pflanzliche Individuum, sondern auf die gesamte Sippe richtet. Solche Betrachtungen ergeben sich notwendigerweise z.B. auf dem Gebiet der Arzneipflanzenforschung, wo naturgemäß das stoffliche Merkmal als Ausdruck des leitenden Forschungsprinzipes im Mittelpunkt steht. Soll nun ein stoffliches Merkmal Anlaß zur Aufstellung eines neuen Taxon sein, nachdem man sich eingehende Kenntnis über seine geographische Verbreitung und Gewißheit über die Inkongruenz mit dem arealmäßigen Vorkommen anderer Merkmale verschafft hat, so erhebt sich die Frage, ob und wie man solche chemisch charakterisierten Taxa bezeichnen soll, um sie unter den zahlreichen anderen leichter zu erkennen. Zu dieser Frage hat es bereits einige Meinungsäußerungen gegeben (cf. Taxon 1958, No. 2).

Ich schlage vor, für chemisch charakterisierte Sippen keine besondere Bezeichnung einzuführen, sondern diese wie üblich nach den gültigen Regeln der internationalen botanischen Nomenklatur zu behandeln, denn es handelt sich auch bei solchen Sippen in allen Fällen um P f l a n z e n, die Unterschiede liegen nur in der Anwendung verschiedener Methoden. Nach der eingangs erwähnten Lage erscheint es ratsam, von einer besonderen Bezeichnung chemisch charakterisierter Taxa auch deshalb abzusehen, weil sonst leicht mit der gleichen Berechtigung auch die Forderung erhoben werden könnte, z.B. elektronenoptisch charakterisierte Taxa entsprechend besonders zu bezeichnen, was eine weitere Komplizierung unserer Nomenklatur bedeuten würde.

An unseren Pflanzen stellen wir doch schließlich keine anderen als morphologische Merkmale im weitesten Sinne fest. Diese erkennen wir allerdings mit verschiedenen Hilfsmitteln:

a. ohne Hilfsmittel oder mit einer Lupe
b. mit lichtoptischem Instrument
c. mit elektronenoptischem Instrument
d. durch ihre Verhaltensweise (stoffliche Merkmale).

Auch aus dieser Betrachtung ergibt sich eine stärkere Akzentuierung der Objekte als der Methoden.

W. Vent (Jena)

ABSTRACTING SERVICES

I read with great interest J. Dostál's plea for an abstracting service for systematic botanists. However, his proposals are, I feel, inpractical at the present time. From past experience I know how difficult it is to maintain co-operation between a large number of participants even in this country, so how much more so, would it be when their distribution is world wide.

Recently there has also appeared advance notice of a botanical abstract journal, rather on the lines of the pre-war Botanisches Centralblatt, an excellent publication, but whose coverage was by no means complete. But no one editor can efficiently control his far-flung body of abstractors or what is more important, maintain complete hold of his ever expanding and changing field of survey.

I would like to propose an alternative plan. I consider that all aspects of pure botanical science should be covered; they are so inter-related today. A small committee of botanists and librarians should determine the limits of the coverage; the classification or grouping of the various aspects; the form of citation and the form of the indexes. The ease of consultation and the fullness of the indexes is a most important factor when considering the value of an abstracting journal. The abstracting service should be based on one of the large Natural History Libraries such as the British Museum (Natural History) London, which currently takes a relatively high percentage of the relevant periodicals, and whose holdings can be supplemented by the extensive resources of the neighbouring Science Museum Library, and other institutions such as the Linnean Society, Royal Horticultural Society and the Library of the Royal Botanic Gardens at Kew. Co-operation of the national libraries of the various countries of the world should nevertheless be sought to provide abstracts of the papers of interest in their local natural history serials, not taken by this central library. It should not be forgotten that papers of importance to systematic botanists may appear in periodicals dealing mainly with agriculture, fishing etc.; therefore to aim at covering periodicals of a purely botanical nature is certainly not enough.

The service should employ mainly full time literature searchers and abstractors. Financial support from such institutions as UNESCO, Smithsonian Institution of Washington and the Royal Society would be imperative and possibly forthcoming as these institutions already aid the publication of the Zoological Record, the organisation of which may well serve as a model.

I would suggest also that the publication should be issued in two forms; single and double-sided pages and on cards, also that the central library should maintain a card index of the abstracts and thus be able to give and maintain an efficient bibliographic service.

P. Edwards (London)

SYRENIOPSIS H. P. FUCHS 1959 NON SYRENOPSIS JAUBERT & SPACH 1842

In a recent paper on the Nomenclature, Taxonomy, and Systematics of *Cheiranthus cuspidatus* Marschall von Bieberstein [in Acta Bot. Acad. sc. Hung. 5(1-2): [39]-55 (April 1959)], I tried to prove that the above mentioned species is best interpreted as the type of a distinct genus which has its systematic position between the two cruciferous genera *Erysimum* L. emend. Beckmann and *Syrenia* ([Andrzejovski, ex] A.-P. Decandolle, pro syn. sect. *Stylonematis* gen. *Erysimi,* ex) Besser. Although this segregate was recognised by Andrzejovski 1817 in his manuscript notes on the family *Cruciferae* A. L. de Jussieu as a separate genus *Cuspidaria,* and was validly published as a section by A.-P. Decandolle 1821, in Mém. Muséum Hist. nat., Paris 7: 229, n. 53, 2, and subsequently as a genus by Besser 1822, Enum. Plant. Volhyn., Podol. (2): 104, I had to choose a new name.

As I pointed out in a footnote [Acta Bot. Acad. sc. Hung. 5(1-2): 52, adnot. 8] this generic name *Cuspidaria* cannot be used because of the conservation of the later homonym *Cuspidaria* A.-P. Decandolle 1838, in Bibl. universelle, Genève, sér. 2. 17: 125 of the family *Bignoniaceae* A. L. de Jussieu "*Bignoniae*". I therefore proposed the new name *Syreniopsis* H. P. Fuchs for the cruciferous genus because the siliques resemble morphologically those of the genus *Syrenia.*

However, I overlooked the fact, that this generic name is not available either, because of the existence of the earlier homonym *Syrenopsis* Jaubert & Spach 1842, Illustr. Plant. Orient. 1(1): [6] [1]. From the original description by Jaubert & Spach it becomes quite evident that this generic name has also been chosen because of the morphologic resemblence of the siliques of *Syrenopsis stylosa* Jaubert & Spach and those of the genus *Syrenia:* "... habitû *Conringiis* et *Turriti glabrae* similis, silicularum formâ autem *Syreniss* accedens (unde nomen generis consumptum)." [2])

I therefore propose the following new name:

Acachmena H. P. Fuchs, *nomen novum* [3])

≡ *Cuspidaria* ([Andrzejovski 1817, in mss., ex] A.-P. Decandolle 1821, in Mém. Muséum Hist. nat., Paris 7: 229, n. 53, 2, pro sect. *Erysimi*) Besser 1822, Enum. Plant. Volhyn., Podol. (2): 104, non A.-P. Decandolle 1838, in Bibl. universelle, Genève, sér. 2, 17: 125, *nomen gener. conserv.*

≡ *Syreniopsis* H. P. Fuchs 1959, in Acta Bot. Acad. sc. Hung. 5(1-2): 52, non *Syrenopsis* Jaubert & Spach 1842, Illustr. Plant. Orient. 1(1): [6].

Acachmena cuspidata (Marschall von Bieberstein) H. P. Fuchs, *comb. nova*

≡ *Cheiranthus cuspidatus* Marschall von Bieberstein 1798, Tabl. Prov. côte occid. Mer Casp.: 116, n. 21.

Acachmena krynkensis (Lavrenko apud Klokov, Kotov & Lavrenko) H. P. Fuchs, *comb. nova*

≡ *Erysimum krynkense* Lavrenko apud Klokov, Kotov & Lavrenko 1926, in Ucrain. Bot. J. 3: 18.

H. P. Fuchs (Basel)

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[1]) For the dates of publication see W. T. Stearn 1939, in J. Soc. Bibl. Nat. Hist., London 1(15): 255-259.

[2]) The genus *Syrenopsis* Jaubert & Spach has been considered taxonomically by Boissier 1867, Fl. Orient. 1: 364 as belonging most probably to *Erysimum* L. emend. Beckmann, and B. D. Jackson 1893, in Ind. Kew. 1: 1202 interpreted it as a synonym of *Iberidella* Boissier 1842, in Ann. Sc. nat., Paris, sér. 2, 17: 188 [= *Aethionema,* sect. *Iberidella* (Boissier, pro genere) Boissier 1867, Fl. Orient. 1: 341]. Recent papers including crucifers from Asia Minor however reestablished the genus *Syrenopsis* Jaubert & Spach. According to O. E. Schulz in Engler & Prantl [ed. H. Harms] 1936, Nat. Pfzen.-fam., ed. 2, 17b: 463, n. 147 this genus belongs to the tribus *Lepidieae,* subtribus *Cochleariinae* Prantl in Engler & Prantl 1891, Nat. Pfzen.-fam., ed. 1, 3(2): 163, emend. O. E. Schulz in Engler & Prantl [ed. H. Harms] 1936, Nat. Pfzen.-fam., ed. 2, 17b: 459. K. H. Rechinger [fil.] 1939, in Ann. nat.-hist. Mus., Wien 49(3): 264/f. 2a-f (February 1939) described a new species from Kurdistania of this previously monotypic genus: *Syrenopsis Bornmuelleri* K. H. Rechinger [fil.].

[3]) Name derived from the Greek adjective ἀκαχμένος = pointed, edged, agreeing with the previously used name *Cuspidaria,* derived from the Latin adjective cuspidarius = belonging to the "cuspis" = point, edge.

THE TYPIFICATION OF THE GENUS AGROPYRON GAERTN.

When J. Gaertner first described the genus *Agropyron,* he included within its confines only two species (Novi Comm. Petrop. XIV p. 531, 1770). The first of these *A. cristatum* (L.) Gaertn. was based on the perennial *Bromus cristatus* L. whilst the second, an annual, *A. triticeum* was described by Gaertner in some detail as a new species. The description of the genus is such that it does not apply more suitably to one species rather than the other and in consequence, a modern selection of a type is governed more by personal choice than taxonomic characters. In such a case, the first choice of a lectotype should be followed by subsequent workers unless there are good grounds for disagreement (see Int. Code of Bot. Nomen. Append. IV. 4e. p. 295, 1956).

The first typification of the genus was made by Britton and Brown who choose *A. cristatum* (L.) Gaertn. (Ill. Fl. N. United States & Canada, etc. I. p. 283, 1913). In 1920 Hitchcock, presumably unaware of the earlier selection, selected *A. triticeum* Gaertn. as the generic type because it was figured by Gaertner (U.S. Dept. Agric. Bull. 772, p. 87, 1920).

Agropyron has subsequently been emended by Nevski who took *A. cristatum* (L.) Gaertn. as the type for *Agropyron* s. str. He placed *A. triticeum* Gaertn. in the genus *Erymopyrum* (Ledeb.) Jaub. & Spach. along with other annual species (Acta Inst. Bot. Acad. Sci. URSS ser. I, fasc. 2, pp. 33-90, 1936).

In a recent paper, Skalicky and Jirasek have criticized Nevski's use of *A. cristatum*

as type in the belief that Hitchcock's earlier selection had priority in this regard. These authors have, therefore, returned the species of *Erymopyrum* to the genus *Agropyron* and have transferred the species of *Agropyron* Gaertn. em. Nevski (which includes *A. pectiniforme, A. sibiricum,* etc.) to the genus *Kratzmannia* Opiz — this being the oldest validly published name (Preslia 31, I. pp. 44-49, 1959).

In the light of the foregoing, it is clear that Nevski's choice of type for *Agropyron* is supported by that of Britton and Brown, which fact coupled with the principle of priority, makes the resurrection of *Kratzmannia* and the other readjustments of Skalicky and Jirasek unnecessary.

It is unfortunate that the long lists of generic type selections made by some of the N. American authors have occasionally been overlooked by taxonomists. In order to assist in the correction of this situation, I shall shortly submit for publication in this journal a complete list of the generic type selections for non-Linnaean genera that were made by Britton and Brown in their 1913 Flora.

KEITH JONES

Contribution No. 10. From Plant Research Institute, Research Branch Canada Agriculture, Central Experimental Farm, Ottawa.

TYPIFICATION OF *PIPTADENIA* BENTHAM

In the February-March number of Taxon (vol. 8: 58-60) Cowan published a list of legume genera for which lectotypes could be selected with reasonable certainty or concerning which important notes required recording. In that list was included the mimosoid genus *Piptadenia* with the note that the lectotype selected by Britton and Rose in 1926 (*P. latifolia*) should be accepted, against the species chosen several years later by Burkart (*P. rigida*). The later choice was supported by Brenan in his review of the African species of the genus in the Kew Bulletin (1955: 170-183). Upon the appearance of the Taxon list Brenan repeated in a letter his objections to Britton and Rose's lectotype and an exchange of correspondence began, which had some interesting results worth noting.

Piptadenia has always been considered as having been validly published in 1842 (Hooker's Journ. Bot. 4: 334) and indeed it would appear so. A full, formal description of the genus is presented there and considerable emphasis is laid on the fruits, which, for *P. latifolia* (Britton & Rose's lectotype), were unknown to Bentham at that time. Subsequently, Burkart discovered an important seed characteristic which, coupled with the incomplete material of *P. latifolia,* he contended was ample reason for choosing a new lectotype and he designated *P. rigida* (Darwiniana 9: 77-78. 1949).

Now, however, we have come across an earlier paper by Bentham (Hooker's Journ. Bot. 2: 135. 1840) in which he provides what must be accepted as valid publication of the genus. The manner of treatment is less formal but he clearly intends the establishment of the genus at this point. He includes four species and the name of one of these, an herbarium name, appears in the 1842 publication as a synonym of *P. latifolia,* the lectotype of Britton and Rose. His informal description of the genus fits this species very much better and, in fact, *P. rigida* falls within a group of species which were dubiously included in *Piptadenia* in the original publication. By 1842 Bentham had changed his concept apparently, but, that he considered *Piptadenia* to have been established in the earlier paper is evident from his failure to append to the name *Piptadenia* the notation "Gen. nov." which he used with each new generic name in the later publication.

The acceptance of this lectotype of Britton and Rose necessitates certain changes in the nomenclature as presented by Brenan and a separate note by him to make the appropriate emendations will appear elsewhere soon.

RICHARD S. COWAN
(Washington, D.C.)
J. P. M. BRENAN (Kew)

GENERAL COMMITTEE

The members of the General Committee have been asked to study the report the Committee for Spermatophyta (Conservation of Generic Names II) published in Taxon 9(1): 14-17. 14 January 1960. All botanists are invited to send their comments, if any, to the secretary of the General Committee before 1 April 1960 (Lange Nieuwstraat 106, Utrecht, Netherlands).

PROPOSALS FOR NOMINA CONSERVANDA FOR FUNGI

In connection with the International Botanical Congresses held at Stockholm and Paris, proposals for the conservation of

generic names of Fungi were compiled by the secretary of the Special Committee for Fungi who circulated them accompanied by his comments among the members of that committee for voting upon them. Since the Paris Congress it has become the rule to publish proposals for conservation directly in "Taxon". This has made it possible for everyone to consider and to discuss the proposals thus brought to their attention. During the Congress at Montreal it appeared that there were mycologists who had not fully realized the change in procedure and, having published proposals in their papers, expected that these proposals would be automatically circulated among the members of the Committee for Fungi for action.

Everyone who is aware of the existence of mycological proposals for conservation not yet acted upon is herewith requested to bring them to my attention. I expect to report on them in "Taxon", if their authors do not wish to do so themselves.

M. A. Donk
Secretary, Committee for Fungi
Rijksherbarium, Leiden.

NATIONAL SCIENCE FOUNDATION

The National Science Foundation announces that the next closing date for receipt of proposals for support of renovation and/or construction of graduate level (doctoral) research laboratories is March 1, 1960. Proposals received prior to that date will be reviewed during late spring and early summer. Disposition of approved proposals will be made during late summer 1960. Proposals received after the March 1, 1960 closing date will be reviewed following the next closing date which is expected to be September 1, 1960.

This program will continue to require at least 50 per cent participation by the institution with funds derived from non-Federal sources. Proposals may be submitted for modernization or construction of research laboratories, including laboratory furnishings but not including apparatus or equipment, in any field of the natural sciences. For the present, this Program is restricted to those departments which have an on-going program leading to the Ph.D. degree. Support of facilities to be used primarily for instructional purposes will not be considered. It is suggested that, depending on the discipline involved, preliminary inquiry be made to either the Division of Biological and Medical Sciences or the Division of Mathematical, Physical, and Engineering Sciences, National Science Foundation, Washington 25, D.C. Information concerning the Program and instructions for preparation of proposals may be obtained upon request.

NOMEN GENERICUM CONSERVANDUM PROPOSITUM

(70) *4666 Turpinia Vent. 1807 versus 4608 Triceros Lour. 1790.*

Already in 1935 Merrill, in his 'Commentary on Loureiro's Flora Cochinchinensis' (Trans. Am. Phil. Soc. n.s. 24, 2: 246, footnote), suggested that Triceros Lour. should "be included in some future list of nomina generica conservanda". Why this has not been realized as yet is not clear. Already in 1825 Sprengel (Syst. 1: 947), in 1874 Baillon (Hist. Pl. 5: 343), and later O. Kuntze (Rev. Gen. Pl. 1: 148. 1891) had recognized this congenerity and it has also recently been accepted by Merrill and Perry (1941) and by J. Krause (in Engl. Pr. Nat. Pfl. Fam. ed. 2, 20b: 306. 1942). Our recent study of the genus for the 'Flora Malesiana' has led to the same result. Though Loureiro's description is hardly sufficient to recognize the species with certainty, there is no doubt about the congenerity of Triceros with Turpinia (Staphyleaceae).

Mostly Turpinia Vent. has been cited from his "Choix" p. 31, t. 31, which was then cited to date from 1803. It has appeared, however, that this part was published in 1808. He had independently also published Turpinia in July 1807, based on T. paniculata Vent.

There are two later homonyms, viz Turpinia H.B.K. Pl. Aequin. 1: 113, t. 33. 1808 (Compositae) and Turpinia Rafin. Med. Repos. 5: 352. 1808 (Anacardiaceae).

A third one is Turpinia Persoon, Syn. Pl. 2: 314. 1807, of which the month of publication is unknown to us. It is a Leguminosa; this generic name has been reduced to the conserved generic name 3789 Poiretia Vent. Choix, t. 42. 1808.

In passing it may be remarked that the reference to Poiretia in the Rules is erroneous, as this genus also was published by Ventenat a year earlier, in Mém. Sc. Math. Phys. Inst. Nat. Fr. 1: 4. 1807. Type P. scandens Vent.

There are three manifest reasons to propose Turpinia Vent. for conservation, viz (1) the wide area it occupies in both the Old and New World tropics, (2) the large number

of species described which amount to about 40, and (3) the fact that accepting the name Triceros would unnecessarily upset nomenclature in a great deal of Floras and other botanical works in many countries. Though the representatives of the genus have no very important use in horticulture, vegetatiology, and forestry, the name Turpinia is used in practically every book in these branches of applied science in the tropics.

The generic name Triceros, contrarily, is entirely obsolete and occurs only in the synonymy of Turpinia in surveys (for example the 'Pflanzenfamilien') or revisions (by Merrill & Perry, J. Arn. Arb. 22: 543. 1941).

As far as we could trace only four authors have, besides Loureiro, employed the name Triceros in the past 150 years, viz Sprengel (Syst. 1: 947. 1825), Moritzi (Syst. Verz. 15. 1846), Baillon (Hist. Pl. 5: 342. 1874), and Gomez de la Maza (Dicc. Bot. Nom. vulg. Cub. & Puerto-Riq. 65. 1889).

There are four binomials under Triceros, of which one is illegitimate (Sprengel's), one is taxonomically not acceptable (Baillon's), and one remains doubtful as to specific identity (Loureiro's, of which no type has yet been located).

As conservation of Turpinia distinctly serves to stabilize nomenclature for the above given reasons the following is proposed:

Turpinia Vent. Mém. Sc. Math. Phys. Inst. Nat. Fr. 1: 3. July 1807, nom. gen. cons. prop.

Typus: T. paniculata Vent.

Triceros Lour. Fl. Cochinch. 1: 184. 1790, nom. gen. rejic. prop.

Typus: T. cochinchinensis Lour.

R. C. Bakhuizen van den Brink
B. L. van der Linden
C. G. G. J. van Steenis

TAXONOMY OF FLOWERING PLANTS

C. L. Porter: Taxonomy of Flowering Plants. W. H. Freeman & Co., San Francisco & London, 1959. xii + 452 pp., 600 ill., frontisp.; price $ 6.75. — This textbook is mainly intended for the undergraduate with a basic botanical training. Yet it contains several novelties which render it very much worth while also for the advanced student and even for the professional botanist. In the general part a concise yet very clear historical summary reviews the principal steps of the development of taxonomic botany. Methods of collecting, labelling and mounting are briefly discussed and well illustrated. The chapters on classification and nomenclature will be very helpful for the beginner, as well as the extensively illustrated chapter dealing with descriptions and terminology.

The most outstanding feature of the taxonomic part are the illustrations, excellent photographs of typical representatives (so often rare or absent in textbooks) and drawings (by E. L. Gillespie). The latter include more or less schematized figures of parts possessing important diagnostic characters and diagrams which are in many ways better than the usual ones, showing, e.g., the superior or inferior position of the ovary, the presence of an hypanthium, etc., though there is no indication of the aestivation of the flower cover. Important orders and families are briefly discussed and examples of representatives and their economical or other importance are given. Certain cases of unusual arrangement of orders or families, such as the division of the *Sympetalae* in a hypogynous and an epigynous group, or the association of *Gramineae, Cyperaceae,* and *Juncaceae* in a group *"Glumiflorae"* might have been worthy of some explanation. In large orders there are keys to the families, in large families keys to subfamilies or tribes. Though the examples have mainly been selected for use in North America, the book could easily be employed by students in other North Temperate regions, which is not in the last place due to the fine illustrations.

K. U. K.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of California

Ph. A. Munz: A California Flora (with collab. of D. D. Keck). Univ. of Calif. Press, 1959. (1681 pp., 134 figs., 2 maps, coloured frontispiece; with introduction dealing with climate, geology, and plant communities; keys to families, genera, and species, descriptions, and data on distribution and habitat. Price $ 11.50).

Flora of Southern Illinois

R. H. Mohlenbrock & J. W. Voigt: A Flora of Southern Illinois. S. Ill. Univ. Press, Carbondale, 1959. (ix + 390 pp., 67 photographs, 10 drawings; with keys to families, genera and species, enumerations of species

and citations of specimens; deals with all native and naturalized vascular plants. Price $ 7.50).

Flora of China

Flora Reipublicae Popularis Sinicae, ed. by S. S. Chien & W. Y. Woon. Vol. II: *Pteridophyta* (*Ophioglossaceae — Oleandraceae*), by R. C. Ching & collab. Acad. Sci. Sin., Peking, 1959. (xvi + 406 pp., 29 plates, with keys and descriptions; Chinese, with numerous Latin descriptions of new species. The first part published of the whole work which will comprise 80 volumes. Price ?).

Flora of North Italy

S. Zenari: Flora escursionistica. Chiave botanica analitica per la determinazione delle principale specie vegetali dell' Alta Italia. Publ. as vol. XXI of Lavori di Botanica, Istituto Botanico dell' Università di Padova, 1959. (xvi + 790 pp.; ill. on 51 plates and illustrated glossary bound in a separate vol. of 143 pp.; with keys and descriptions; deals with the most important native and cultivated vascular plants of northern Italy. Price ?).

Distribution maps of Japanese plants

H. Hara & H. Kanai: Distribution maps of flowering plants in Japan. Part 2. Inoue Book Co., Tokyo, 1959. (vi + 96 pp., 105 maps, 61 photographs. Price $ 8.00).

Verbenaceae, Eriocaulaceae, etc.

H. N. Moldenke: A résumé of the *Verbenaceae, Avicenniaceae, Stilbaceae, Symphoremaceae,* and *Eriocaulaceae* of the world as to valid taxa, geographic distribution and synonymy. Privately printed (offset) by the author, 1959. (495 pp., with mimeographed supplement of 26 pp.; a list of countries with enumerations of the representatives of the above-named families occurring within their limits, a list of synonyms, keys to genera and subordinate groups, and extensive geographic and taxonomic index.).

Index of American Palms

B. E. Dahlgren: Index of American Palms. Plates. Publ. as vol. XIV (publication 863) of the Field Museum of Natural History, Botanical Series, Chicago, 1959. (411 photographs of type specimens made by J. F. Macbride).

Sedum of Trans-Mexican volcanic belt

R. T. Clausen: *Sedum* of the Trans-Mexican volcanic belt. An exposition of taxonomic methods. Cornell Univ. Press, Ithaca, N.Y., 1959. (x + 380 pp., 80 drawings and photographs; with notes on the geology of the region, extensive descriptions of species with biometric data, keys to wild and cultivated species for flowering and sterile material, and notes on relationships and methods. Price $ 7.75).

Index to The Bryologist

The Bryologist: Index to vols. 1-60, ed. by H. A. Crum. Publ. by the Am. Bryol. Soc., 1959. (217 pp.; a general index with references to subjects, names of persons, authors of articles, and plants, etc. Price $5.00. Available from Dr. L. E. Anderson, Dept. of Botany, Duke University, Durham, North Carolina).

Catalogue of Fossils

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LA RÉUNION DES COLLECTIONS DE CANDOLLE, DELESSERT ET BOISSIER AU CONSERVATOIRE BOTANIQUE DE GENÈVE

Charles Baehni (Genève)

Alphonse de Candolle, par une note retrouvée dans ses papiers, avait conseillé à sa famille de donner ses collections botaniques à la Ville de Genève, au cas où aucun de ses descendants ne s'intéresserait à la botanique. Après lui, il y eut encore Casimir et Augustin et à la mort de ce dernier (disparu trop tôt, hélas! pour avoir pu donner toute sa mesure), sa veuve et ses enfants se souvenant du conseil de l'aïeul vendirent à la Ville, pour une somme dérisoire, la célèbre bibliothèque et donnèrent les herbiers. Sauf l'herbier du Prodrome, ceux-ci furent combinés alors avec l'herbier Delessert.

L'herbier Boissier qui s'était développé considérablement sous la direction de William Barbey fut, comme on sait, donné par sa famille à l'Université, c'est-à-dire à l'Etat de Genève. Un accord passé entre celui-ci et la Ville en 1943 permit de réunir les deux grands herbiers genevois sous une même direction, celle du Professeur Hochreutiner. Cet arrangement facilitait déjà beaucoup les choses, mais comme les bâtiments abritant les collections se trouvaient aux deux pôles de la ville, la consultation resta malaisée jusqu'au jour où l'on s'avisa qu'on pouvait tout loger sous le même toit; les quelques aménagements très simples que cette concentration entraînait au Conservatoire ont été terminées cette année. Environ la moitié du sous-sol du bâtiment a été d'abord libérée par le déplacement d'un petit musée et d'une partie du service du jardin puis transformée en galeries d'herbiers grâce à l'emploi d'un système original d'armoires roulantes. Ainsi, des locaux sains et bien éclairés ont pu recevoir l'équivalent de l'herbier Boissier et de l'herbier Barbey réunis.

Nos photos montrent ce qui a été exécuté. Les blocs de 5 armoires compactes et sans partes roulent au moyen de galets sur des rails plats noyés dans une chappe de béton; grâce au levier qu'on distingue au flanc de chaque corps, on "accroche" le bloc à un câble qu'un petit moteur entraîne le long d'un double sillon creusé dans le sol. Sans effort, on peut faire avancer ou reculer un ou plusieurs corps à la fois de façon à créer un couloir à l'endroit où l'on veut travailler: il n'y a donc plus aucune place perdue et l'étanchéité est absolue. Le seul inconvénient de cette dispo-

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sition réside dans le fait qu'on ne peut pas travailler dans deux blocs contigus, mais le gain de place est si considérable (disparition de presque tous les couloirs!) qu'on peut facilement accepter ce défaut-là. Si les locaux avaient été neufs, on aurait pu prévoir un espace de travail plus large, mais tels qu'ils se présentent désormais, ils nous ont permis d'absorber près de 9000 paquets dans un espace relativement restreint. Nous croyons que c'est la première fois qu'on applique dans un herbier un système employé jusqu'ici pour des documents ou des livres.

Vue des armoires fermées

Il est prévu que la fusion des herbiers, c'est-à-dire leur intégration parfaite doit devenir complète, mais on estime qu'il faudra 25 ans pour parvenir au but: en effet, le format de l'herbier Barbey est plus grand que celui des herbiers de Candolle et Delessert: il faudra donc changer tous les papiers et pour le moment, il a fallu se contenter d'insérer les paquets Barbey entre ceux de l'herbier général. Quant à l'herbier Boissier, basé sur le *Flora orientalis*, il va de soi qu'il restera conservé à part au même titre que l'herbier du Prodrome.

Ces arrangements rendent déjà plus aisé le travail des botanistes mais ils ne nous ont pas donné toute la place que nous aurions voulu. La construction d'un nouveau bâtiment est mise à l'étude; cependant, nous pouvons attendre quelques années sans nous trouver trop gênés. On peut être assuré que le futur Conservatoire sera équipé de la même façon que la nouvelle galerie dont les avantages sont évidents: la généralisation de ce système permettra une construction très petite (donc bon marché) et un raccourcissement des interminables couloirs de la maison actuelle.

L'intérieur d'un couloir ouvert

Dans tous les musées du monde où l'on souffre du manque de place, il nous paraît que la solution choisie par les architectes de la Ville de Genève mériterait d'être étudiée avec beaucoup d'attention.

THE SUBKINGDOMS OF PLANTS [1])

Leo Francis Koch (Urbana, Ill.) [2])

Many of the textbooks of elementary botany and biology now in use refer to an "old" system of classification of plants in which four divisions (phyla) are recognized: Thallophyta; Bryophyta; Pteridophyta; Spermatophyta. Although the inadequacies of this system are almost universally recognized, botanists continue to use it for want of something more practical. In the meantime, a variety of "new" systems of classification have been proposed almost to the point of embarrassment to botanists.

Thus, in 1942, Dr. Oswald Tippo wrote that, "The writer knows of no general modern classification which reflects the newest, sound developments in all the branches of plant phylogeny and in which the various groups are named in such a way as to indicate rank or degree of affinity . . . ." (*Chronica Botanica* 7: 203-206, 1942) Tippo proposed "A Modern Classification of the Plant Kingdom" for which he claimed "no great degree of originality . . . . for it is a compilation, a synthesis of several proposals. In the main G. M. Smith's classification of the thallophytes has been followed and in the arrangement of the vascular plants much has been borrowed from Eames".

In the past, the major subdivisions of the plant kingdom have been those which are now called divisions or phyla. Therefore, one of the unique aspects of Tippo's classification, although not discussed by him, is the usage of a new category, the subkingdom, in the hierarchy of the phytotaxonomic system. He recognized two subkingdoms, the Thallophyta and the Embryophyta. The algae and fungi, as in the old system, are included under the Thallophyta, and the bryophytes, pteridophytes, and spermatophytes are included under the Embryophyta. The utility of the category, subkingdom, has been apparent to many botanists who have used it in their own books and publications.

According to *The Century Dictionary* (6: 6022, The Century Co., 1899), the term, "subkingdom" has a long history, but only in connection with the grouping of plants at the level of division or phylum. However, before the general acceptance of the International Code of Botanical Nomenclature there was little agreement as to what the primary subdivisions of the plant kingdom should be called, and most often they were not designated in any formal fashion whatsoever.

Thus, for example, Brongniart's terminology of Cryptogam and Phanerogam was used in various combinations. Generally, however, the cryptogams included all plants except the Angiosperms, which constituted the Phanerogams. Similarly in other systems, the lower groups of plants were lumped either into a category designated as "Acotyledonae", or "Cellulares", without any clear concept of the diversity of organisms which were so labelled. From any modern perspective it is doubtful if such arrangements can properly be said to be systematic in any sense of the word. The point is that these subdivisions were generally called subkingdoms, and therefore have little bearing on Tippo's usage of the term as a category between kingdom and division, so that each subkingdom is comprised of a well-ordered array of divisions along natural lines.

Suffice it to say that the *Glossary of Botanical Terms* (Jackson, 4th ed., 1928, Hafner Pub. Co.) does not contain the word, Subkingdom. Furthermore, it may be noted that the current edition of the International Code of Botanical Nomen-

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1) Delivered before the American Society of Plant Taxonomists, Bloomington, Ind.

2) Division of General Studies, University of Illinois, Urbana, Ill., U.S.A.

clature lists "divisio" as the primary subdivision of the plant kingdom, and does not recognize subkingdoms directly, even by implication. However, the code does specifically grant botanists the privilege of introducing intermediate categories with discretion.

The trend among taxonomists has been to recognize an increasing number of divisions of the plant kingdom. The logical outcome of this trend is well exemplified by Bold (*The Morphology of Plants*, Harper & Bros., 1957), who recognized 24 divisions. After enumerating them, Bold wrote: "Finally, before leaving the subject of classification for the present, the writer cannot emphasize too strongly the futility of attempting to summarize the system of classification at this point" (p. 9).

Taxonomists are not agreed as to the phylogenetic significance of the divisions of plants, but the widespread usage of artificial keys of various types for the identification of specimens attests to their belief that a system of classification should have some utility. And it is from my concern for utility in teaching that I have come to be especially concerned about the usage of the category of subkingdom in the phytotaxonomic system. The prevalence of this concern can be inferred from the continued usage of the old system of classification in spite of its patent theoretical deficiencies.

However, practicality for teaching is not often recognized as a taxonomic principle among biologists. Probably, botanists, in general, still cling to a dichotomous interpretation of experience in which art and science are conceived as dualistic aspects of man's behavior having nothing in common. The fallacy of such medieval thought is clearly discussed by J. Bronowski, British mathematician and playwright, in two books, *The Common Sense of Science* (Harvard U., 1955), and *Science and Human Values* (Messner, 1958).

The point is that all systems of nomenclature are the product of a creative process involving the subjective recognition of identity, and the arbitrary naming of the resultant concepts. To this extent, taxonomy, and other sciences also, involve artistic talent just as truly as does painting or poetry. This basic similarity of art and science is not often admitted publicly, either by artists or scientists.

The difference between art and science lies in what happens after the initial creative impulse. Whereas the artist may be content to let his creation speak for itself, the scientist is bound to test the applicability of his product to the blooming, buzzing world around him. Both art and science involve individual talent and skill in practice, but science involves reliance on objective standards for evaluation rather than subjective ones.

The recognition of the basic artificiality of all verbal classification leads to the important deduction that we may accept at will a dualistic or pluralistic system of classification, and that the final choice may be made after a pragmatic evaluation of the possible alternatives. I submit that teaching is a much more important useful application of taxonomic systems than most taxonomists are willing to acknowledge. And it is from the pedagogical perspective that I question the practicality of a dualistic set of subkingdoms, as well as of a pluralistic set when the number exceeds 7 or 8.

Of course, a dualistic system is in accord with our cultural milieu, and is well illustrated by the infinite number of dualistic dilemmas which still plague our thinking in science as well as in religion, philosophy, sex, and everywhere else. In certain instances, such as in the construction of keys for the identification of specimens, the dualistic approach is valid and useful. However, in a system of classification for a very large number of events, a pluralistic system is mandatory in order to restrict the number of categories themselves to a manageable number.

The groups of plants which have been accorded the rank of divisions in the past can be arranged into four clusters easily recognizable and definable according to naturalistic principles. Even in the old system of classification, the thallophytes were immediately divided into the algae and fungi, and these two categories have been used universally by researchers as well as teachers. To emphasize the distinctions between them, I might cite the considered opinion of G. W. Martin, who asks the question, "Are Fungi Plants?" (*Mycologia* XLVII (6): 779-792). He is suggesting, I believe, that the degree of relationship or similarity between the algae and fungi is significantly less than that among the algae or among the fungi.

Equally distinct and recognizable are the bryophytes. They certainly represent a dead-end in the phylogenetic development of plants. Unfortunately, the radically divergent nature of the characteristics of the various kinds of bryophytes are not yet apparent to botanists generally because so little bryological research has been directed toward this question. I feel that it is entirely a matter of time until their polyphyletic nature is established. Bold recognized two divisions of bryophytes (Hepatophyta and Bryophyta), but I doubt if that number is enough to express adequately the degree of specialization and evolutionary divergence shown by them.

The truly divergent evolutionary paths of the bryophytes and tracheophytes is supported by the report by LeClerq in 1956 (*Evolution*) of the existence of vascular plants in the Silurian and Cambrian periods, preceding, and significantly different from, the psilophytes. I am suggesting that the evolutionary origin of the bryophytes and the vascular plants occurs much nearer the origin of the green-algal line than is generally supposed, and that the bryophytic line itself should be broken up to indicate that they originated from different algal stocks, perhaps as many as five.

It is apparent to any serious student of phylogeny that common ancestry is not a sufficient criterion for the establishment of a division of plants or animals. If it were, we should be obliged to include the green algae with the bryophytes and tracheophytes in a single division. In addition to common ancestry, we must also consider the evolutionary advancements which have been achieved among the different types of plants.

The recognition of four subkingdoms of plants: algae; fungi; bryophytes; and tracheophytes; in addition to its pedagogical advantages, indicates, to some extent, the extreme age of the four evolutionary trends which have characterized plants. Furthermore, it suggests a stark contrast between the many similarities within each of the four groups, and the radical divergence among them.

In summary, my proposal is to recognize four subkingdoms of plants, whose names can be designated as ending in the suffix, "phytae" to differentiate them from the names of divisions, which end in "phyta". They are: Phycophytae, to include the algal divisions; Mycophytae, to include the fungal divisions; Bryophytae, to include the bryophytic divisions; and Tracheophytae, to include the divisions of vascular plants. The delineation of these four subkingdoms is readily apparent from Tippo's system of classification already mentioned.

NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM IV*

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

5320. **Xylosma** G. Forster, Fl. Ins. Austr. Prodr. 72. 1786.
T.: *X. orbiculatum* (J. R. et G. Forster) G. Forster (*Myroxylon orbiculatum* J. R. et G. Forster) (*typ. cons.*).
(≡) *Myroxylon* J. R. et G. Forster, Char. Gen. Pl. 125. 1776.
nom. rej. vs. *Myroxylon* Linnaeus f. 1781 (*nom. cons.*) (3584).

Note: *Xylosma* was superfluous when published, hence illegitimate; the conservation remains necessary. *Miroxylon* Scopoli, Intr. 267 (1777), is obviously only an orthographic variant of *Myroxylon* J. R. et G. Forster: the diagnoses are identical.

5334. **Lunania** W. J. Hooker, London Journ. Bot. **3**: 317. 1844.
T.: *L. racemosa* W. J. Hooker.
(H) *Lunanea* A. P. Decandolle, Prodr. **2**: 92. Nov 1825 [STERCUL.].
≡*Bichea* Stokes 1812 (etiam vide 5091).

Note: Another homonym: *Lunania* Rafinesque, Med. Fl. **2**: 106 (1830) [PONTED.].

†5338. **Laetia** Linnaeus, Syst. Nat. ed. 10 1074, 1373. Mai-Jun 1759.
T.: *L. americana* Linnaeus.

Note: Conservation superfluous: *Laetia* Linnaeus was a substitute name for (≡) *Guidonia* P. Browne, Hist. Jamaica 249 (1756), non P. Miller, Gard. Dict. Abr. ed. 4 (1754). (=) *Thamnia* P. Browne, Hist. Jamaica 245 (1756), is no longer available because of the conserved *Thamnea* Ad. Brongniart 1826 (3284). Since there is no competing name, *Laetia* stands.

5341. **Ryania** Vahl, Ecl. **1**: 51. *t. 9.* 1796.
T.: *R. speciosa* Vahl.
(=) *Patrisa* L. C. Richard, Act. Soc. Hist. Nat. Paris **1**: 110. 1792.
T.: *P. pyrifera* L. C. Richard.

5353. **Tetralix** Grisebach, Cat. Pl. Cub. 8. 1866.
T.: *T. brachypetalus* Grisebach.
(H) *Tetralix* Zinn, Catal. 202. Mai. 1757.
T.: *Erica herbacea* Linnaeus (Sp. Pl. 352. 1753).

Note: Another homonym: *Tetralix* J. Hill, Veg. Syst. **4**: 18 (1762) [COMP.].

LOASACEAE

5392. **Blumenbachia** Schrader, Gött. Gelehrte Anz. **1825**: 1705. 24 Oct 1825.
T.: *B. insignis* Schrader.
(H) *Blumenbachia* Koeler, Descr. Gram. Gall. Germ. 28. 1802 [GRAM.].
T.: *B. halep(p)ensis* (Linnaeus) Koeler (*Holcus halepensis* Linnaeus).

ANCISTROCLADACEAE

5400. **Ancistrocladus** Wallich, Num. List n. 1052. 1829.
T.: *A. hamatus* (Vahl) Gilg [in Engler & Prantl, Natürl. Pflanzenf. **3**(6): 276. 19 Feb 1895] (*Wormia hamata* Vahl).
(=) *Bembix* Loureiro, Fl. Cochinch. 259, 282. 1790.
T.: *B. tectoria* Loureiro.

Note: Wallich's name was a substitute name for *Wormia* Vahl, Skr. Naturh. Selsk. Kjøbenh. **6**: 105 (1810), non Rottboell, Nya Samml. Vid. Selsk. Skr. **2**: 532. (1783), and therefore not a *nomen nudum*. Its conservation remains necessary because of (=) *Bembix* Loureiro (1790).

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* Continued from Taxon **8**: 314. 1959.

CACTACEAE

5411. **Mammillaria** Haworth, Syn. Pl. Succ. 177. 1812.
T.: *M. simplex* Haworth, nom. illeg. [*Cactus mammillaris* Linnaeus, *M. mammillaris* (Linnaeus) H. Karsten] (*typ. cons.*).
(H) *Mammillaria* Stackhouse, Mém. Soc. Nat. Moscou **2**: 55, 74. 1809 [ALGAE].
(≡) *Cactus* Linnaeus, Sp. Pl. 466. 1753.

5416. **Rhipsalis** J. Gaertner, Fruct. **1**: 137. 1788 (Dec 1788-Apr 1789).
T.: *R. cassutha* J. Gaertner.
(=) *Hariota* Adanson, Fam. **2**: 243, 520. 1763 prim.

OLINIACEAE

5428. **Olinia** Thunberg, Arch. Bot. Roemer **2**: 4. 1799.
T.: *O. cymosa* (Linnaeus f.) Thunberg (*Sideroxylon cymosum* Linnaeus f.).
(=) *Plectronia* Linnaeus, Syst. Nat. ed. 12. 138, 183; Mant. 6, 52. Oct 1767.
T.: *P. ventosa* Linnaeus.

Note: The rejection of *Plectronia* 'excl. fruct. et syn.' fixes its typification. The fruit and synonym apply to *Canthium* Lamarck, Enc. **1**: 602 (1785) (vide Hiern, Cat. Afr. Pl. Welw. **1**: 472. 1898; Bullock, Kew Bull. **1932**: 354. 1932).

THYMELAEACEAE

5430. **Aquilaria** Lamarck, Enc. **1**: 49. Dec 1783.
T.: *A. malaccensis* Lamarck.
(=) *Agallochum* Lamarck, Enc. **1**: 48. Dec 1783.

5436. **Struthiola** Linnaeus, Syst. Nat. ed. 12. 108, 126; Mant. 4, 41. Oct 1767.
T.: *S. virgata* Linnaeus (*typ. cons.*).
(=) *Belvala* Adanson, Fam. **2**: 285. 1763 prim.
T.: *Passerina dodecandra* Linnaeus (Syst. Nat. ed. 10. 1004. 1759).

5446. **Wikstroemia** Endlicher, Prodr. Fl. Norfolk. 47. 1833 ('*Wickstroemia*'); corr. Enchiridion 209. 1841.
T.: *W. australis* Endlicher.
(V) *Wickstroemia* Endlicher, Prodr. Fl. Norfolk. 47. 1833.
(H) *Wikstroemia* Schrader, Gött. Gelehrte Anz. 710. 5 Mai 1821 [THEAC.] (etiam vide 5149).
T.: *W. fruticosa* Schrader.
(=) *Capura* Linnaeus, Mant. **2**: 149, 225. Oct 1771.
T.: *C. purpurata* Linnaeus.

Note: (H) *Wikstroemia* C. Sprengel, Vet.-Akad. Handl. Stockholm **1821**: 567 (1821, post Mai) [COMPOS.], is another homonym of *Wikstroemia* Schrader (1821).

5453. **Thymelaea** P. Miller, Gard. Dict. Abr. ed. 4. 1754.
T.: *T. sanamunda* Allioni (Fl. Ped. **1**: 132. 1785) (*Daphne thymelaea* Linnaeus) (*typ. cons.*).

Note: Conservation still necessary to conserve the choice of type. All competing names are later. P. Miller describes 40 species of which no. 17 is the equivalent of *Daphne thymelaea*.

5457. **Ovidia** Meisner in Decandolle, Prodr. **14**: 524. Nov 1857.
T.: *O. pillopillo* (C. Gay) Meisner (*Daphne pillopillo* C. Gay) (*typ. cons.*).
(H) *Ovidia* Rafinesque, Fl. Tell. **3**: 68. Nov-Dec 1837 ('1836') [COMMEL.].
T.: *O. gracilis* (Ruiz et Pavon) Rafinesque (*Commelina gracilis* Ruiz et Pavon).

†5467. **Pimelea** Banks et Solander ex J. Gaertner, Fruct. **1**: 186. 1788 (Dec 1788-Apr 1789).
T.: *P. laevigata* J. Gaertner, nom. illeg. [*Banksia prostrata* J. R. et G. Forster, *P. prostrata* (J. R. et G. Forster) Willdenow].

Note: Conservation now superfluous: (=) *Banksia* J. R. et G. Forster 1776 is no longer available because of the conservation of *Banksia* Linnaeus f. (1781) (see 2068). *Pimelea* was not superfluous on publication, because Gaertner took only one species from *Banksia* J. R. et G. Forster.

post 5467. **Synandrodaphne** Gilg, Bot. Jahrb. **53**: 362. 19 Oct 1915.
T.: *S. paradoxa* Gilg.

(H) *Synandrodaphne* Meisner in Decandolle, Prodr. **15**(1): 176. Mai 1864 [LAUR.].

ELAEAGNACEAE

†5471. **Shepherdia** Nuttall, Gen. **2**: 240. Mai 1818.
T.: *S. canadensis* (Linnaeus) Nuttall (*Hippophae canadensis* Linnaeus) (*typ. cons.*).

Note: Conservation superfluous: (≡) *Lepargyrea* Rafinesque was not validly published until Jan 1819 (Am. Mon. Mag. Crit. Rev. **4**: 195).

SONNERATIACEAE

5497. **Sonneratia** Linnaeus f., Suppl. 38, 252. 1781 sem. 2.
T.: *S. acida* Linnaeus f.

(≡) *Blatti* Adanson, Fam. Pl. **2**: 88, 526. 1763 prim.

Note: Pagapate Sonnerat, Voy. Nouv. Guin. 16 (1776), is a vernacular name.

LECYTHIDACEAE

†5505. **Careya** Roxburgh, Pl. Corom. **3**: 13. Jul 1811.
T.: *C. herbacea* Roxburgh (*typ. cons.*)
(vide etiam Knuth, Pflanzenreich IV. **219** (Heft **105**): 50. 22 Aug 1939).

Note: Conservation superfluous: *Cumbia* F. Hamilton, Mysore **3**: 187 (1807), is a vernacular name.

5506. **Barringtonia** J. R. et G. Forster, Char. Gen. Pl. 75. *t. 38.* 1776.
T.: *B. speciosa* J. R. et G. Forster.

(=) *Huttum* Adanson, Fam. Pl. **2**: 88, 616. 1763 prim.

5510. **Gustavia** Linnaeus, Pl. Surin. 12, 17. 18. *t.* [s.n.] Jun 1775; Amoen. Acad. **8**: 266. *t. 5.* 1785.
T.: *G. augusta* Linnaeus.

(=) *Japarandiba* Adanson, Fam. **2**: 448. 1763 prim.
T.: *Gustavia marcgraviana* Miers ("Marcg. 109"), (vide Miers, Trans. Linn. Soc. **30**: 183. 1874).

RHIZOPHORACEAE

5525. **Carallia** Roxburgh, Pl. Corom. **3**: 8. *t. 211.* 1819.
T.: *C. lucida* Roxburgh.

(=) *Diatoma* Loureiro, Fl. Cochinch. 295. 1790.
T.: *D. brachiata* Loureiro.
(=) *Barraldeia* Thouars, Gen. Nov. Madag. 24. 1808(?) ('1806').

Note: Kare Kandel Adanson 1763, being a generic name of 2 words, has no nomenclatural standing.

5528. **Weihea** C. Sprengel, Syst. **2**: 559, 594. 1825 sero.
T.: *W. madagascarensis* C. Sprengel.
(≡) *Richaeia* Thouars, Gen. Nov. Madag. 25. 1806.
nom. rej. vs. *Richea* R. Brown 1810 (*nom. cons.*) (6254).

Note: *Weihea* was published as an avowed synonym of *Richaeia* Thouars; the conservation therefore remains necessary notwithstanding the conservation of *Richea* R. Brown (1810) which renders *Richaeia* illegitimate. The epithet '*madagascarensis*' was first given by C. Sprengel. The combination *Richaeia madagascariensis* Thouars ex Poiret, Dict. Sci. Nat. **45**: 446 (1827), is later and was made independently from *Weihea madagascarensis* C. Sprengel.

COMBRETACEAE

5538. **Combretum** Loefling, Iter Hisp. Append. 308. 1758 sero.
T.: *C. fruticosum* (Loefling) Stuntz (U.S. Dep. Agr. Invent. Seeds Pl. Import. **31**: 86. 1914 prim.) (*Gaura fruticosa* Loefling) (vide Linnaeus, Syst. Nat. ed. 10. 999. 1759 et Loefling, Iter Hisp. Append. 248. 1758).
(=) *Grislea* Linnaeus, Sp. Pl. 348. 1753.
T.: *G. secunda* Linnaeus.

5543. **Bucida** Linnaeus, Syst. Nat. ed. 10. 1025, 1368. Mai-Jun 1759.
T.: *B. buceras* Linnaeus.
(≡) *Buceras* P. Browne, Hist. Jamaica 221. *t. 23. fig. 1.* 1756.

5544. **Terminalia** Linnaeus, Syst. Nat. ed. 12. **2**: 674 (err. 638); Mant. 21, 128. Oct 1767.
T.: *T. catappa* Linnaeus.
(=) *Adamaram* Adanson, Fam. **2**: 445. 1763 prim.
(=) *Panel* Adanson, Fam. **2**: 447. 1763 prim.
T.: 'H.M. 2. t. 9'.

Note: (=) *Adamaram* Adanson (1763) is based on Hort. Malab. **4**: *t. 3, 4, 5* (1682), of which *t. 3, 4* are *Terminalia catappa* Linnaeus and *t. 5 Myristica malabarica* Lamarck. The citation of *t. 5* was evidently an error, because Adanson also cited this plate correctly under his genus *Comacum* on p. 345.

MYRTACEAE

5575. **Calyptranthes** Swartz, Prodr. 5, 79. Jun-Jul 1788.
T.: *C. chytraculia* (Linnaeus) Swartz (*Myrtus chytraculia* Linnaeus) (*typ. cons.*).
(≡) *Chytraculia* P. Browne, Hist. Jamaica 239. 1756.

Note: (≡) *Chytralia* Adanson, Fam. **2**: 80, 538 (1763), was a superfluous name for *Chytraculia* P. Browne.

5582. **Jambosa** Adanson, Fam. **2**: 88, 564. 1763 prim. ('*Jambos*'); corr. A. P. Decandolle, Dict. Class. Hist. Nat. **11**: 407. Jan 1827 (preprint 8. 1826).
T.: *J. vulgaris* A. P. Decandolle, nom. illeg. [*Eugenia jambos* Linnaeus, *J. jambos* (Linnaeus) Millspaugh] (*typ. cons.*).
(V) *Jambos* Adanson, Fam. **2**: 88, 564. 1763 prim.

5585. **Piliocalyx** A. T. Brongniart et Gris, Bull. Soc. Bot. France **12**: 185. post Apr 1865.
T.: *P. robustus* A. T. Brongniart et Gris (*typ. cons.*).
(H) *Pileocalyx* Gasparrini, Ann. Sci. Nat. Bot. ser. 3. **9**: 220. Apr 1848 [CUCURB.].
≡ *Mellonia* Gasparrini 1847.

5588. **Metrosideros** Banks ex J. Gaertner, Fruct. **1**: 170. *t. 34, fig. 10.* 1788 (Dec 1788-Apr 1789).
T.: *M. scandens* Solander ex J. Gaertner [syn. tax.: *Leptospermum perforatum* J. R. et G. Forster, *M. perforata* (J. R. et G. Forster) A. Richard] (*typ. cons.*).
(=) *Nani* Adanson, Fam. **2**: 88, 581. 1763 prim.
T.: *Metrosideros vera* Lindley ('Rumph. 3. t. 7').

†5600. **Agonis** (A. P. Decandolle) Lindley, Bot. Reg. **23**: Swan River app. x. 1 Nov 1839.
T.: *A. flexuosa* (Willdenow) Lindley (*Metrosideros flexuosa* Willdenow) (*typ. cons.*).

Note: Conservation now superfluous: (≡) *Billotia* R. Brown ex G. Don, Gen. Hist. **2**: 810 (1832), is not available because of *Billotia* Colla, Hort. Ripul. 20. 1824 (see McVaugh, Taxon **5**: 162. 1956). A proposal to 'deconserve' this name was accepted by the Committee for Spermatophyta (Taxon **7**: 191. 1958).

5603. **Melaleuca** Linnaeus, Syst. Nat. ed. 12. 509; Mant. 14, 105. Oct 1767.
T.: *M. leucadendron* ("*leucadendra*") (Linnaeus) Linnaeus (*Myrtus leucadendra* Linnaeus, Sp. Pl. ed. 2. 676. Sep 1762) (*typ. cons.*).
(≡) *Kajuputi* Adanson, Fam. **2**: 84, 530. 1763 prim.

5621. **Thryptomene** Endlicher, Ann. Wiener Mus. **2**: 192. 1839 ('Dec 1838').
T.: *T. australis* Endlicher.
(=) *Gomphotis* Rafinesque, Sylva Tell. 103. 1838 trim. 4.
T.: *G. saxicola* (A. Cunningham ex W. J. Hooker) Rafinesque (*Baeckea saxicola* A. Cunningham ex W. J. Hooker).

†5625. **Verticordia** A. P. Decandolle, Prodr. **3**: 208. Mar 1828.
T.: *V. fontanesii* A. P. Decandolle, nom. illeg. [*Chamelaucium plumosum* Desfontaines; *V. plumosa* (Desfontaines) Druce] (*typ. cons.*).

Note: Conservation superfluous: *Diplachne* R. Brown ex Desfontaines, Mém. Mus. Hist. Nat. Paris **5**: 272 (1819), was published in synonymy (see also McVaugh, Taxon **5**: 162. 1956).

MELASTOMATACEAE

5632. **Pterolepis** (A. P. Decandolle) Miquel, Comm. Phytogr. **2**: 72. 1839 ('1840').
T.: *P. parnassifolia* (A. P. Decandolle) Triana ('*parnassiaefolia*') (*Osbeckia parnassifolia* A. P. Decandolle) (*typ. cons.*).
(H) *Pterolepis* H. A. Schrader, Gött. Gelehrte Anz. **1821**: 2071. 29 Dec 1821 [CYPER.], [see also sub 468].
T.: *P. scirpioides* H. A. Schrader.

†5648. **Microlepis** (A. P. Decandolle) Miquel, Comm. Phytogr. **2**: 71. 1839 ('1840').
T.: *M. oleaefolia* (A. P. Decandolle) Triana (Trans. Linn. Soc. **28**: 36. 1871) (*Osbeckia oleaefolia* A. P. Decandolle) (*typ. cons.*).

Note: Conservation superfluous: *Microlepis* Eichwald, Pl. Nov. Casp.-Cauc. 2 (1832), is a *nomen nudum.*

5659. **Dissotis** Bentham in W. J. Hooker, Niger Fl. 346. Nov-Dec 1849.
T.: *D. grandiflora* (J. E. Smith) Bentham (*Osbeckia grandiflora* J. E. Smith).
(≡) *Hedusa* Rafinesque, Sylva Tell. 101. 1838 trim. 4.

5665. **Monochaetum** (A. P. Decandolle) Naudin, Ann. Sci. Nat. Bot. ser. 3. **4**: 48. Jul 1845.
T.: *M. candolleanum* Naudin, nom. illeg. [*Arthrostemma calcaratum* A. P. Decandolle, *M. calcaratum* (A. P. Decandolle) Triana] (*typ. cons.*).
(=) *Ephynes* Rafinesque, Sylva Tell. 101. 1838 trim. 4.
T.: *E. bonplandii* (Humboldt et Bonpland) Rafinesque (*'bonplandi'*) (*Rhexia bonplandii* Humboldt et Bonpland).

5669. **Cambessedesia** A. P. Decandolle, Prodr. **3**: 110. Mar 1828.
T.: *C. hilariana* (Kunth) A. P. Decandolle (*Rhexia hilariana* Kunth) (*typ. cons.*).
(H) *Cambessedea* Kunth, Ann. Sci. Nat. **2**: 336. Mai 1824 [ANACARD.].
T.: *Mangifera axillaris* Desrousseaux in Lamarck, Enc. **3**: 697. 1789.

5676. **Rhynchanthera** A. P. Decandolle, Prodr. **3**: 106. Mar 1828.
T.: *R. grandiflora* (Aublet) A. P. Decandolle (*Melastoma grandiflora* Aublet) (*typ. cons.*).
(H) *Rynchanthera* Blume, Tabell. Jav. Orch. *t. 78.* 1825 [ORCHID.].
T.: *R. paniculata* Blume.

5692. **Meriania** Swartz, Fl. Ind. Occ. **2**: 823. *t. 15.* 1800.
T.: *M. leucantha* (Swartz) Swartz (*Rhexia leucantha* Swartz) (*typ. cons.*).
(H) *Meriana* Trew, Pl. Sel. Pinx. Ehret 11. *t. 40.* 1754 [IRID.].
≡ *Watsonia* P. Miller 1759 (*nom. cons.*) (1315).

5708. **Bertolonia** Raddi, Mem. Soc. Ital. Sci. **18**: 384. *t. 5, fig. 3.* 1820 sero.
T.: *B. nymphaeaefolia* Raddi.
(H) *Bertolonia* Spin, Jard. St. Sébast. 24. 1809 [MYOPOR.].
T.: *B. glandulosa* Spin.

Note: The original publication by Spin (1809) has not been seen by us (title from Pritzel).

†5729. **Sonerila** Roxburgh, Fl. Ind. **1**: 180. 1820.
T.: *S. maculata* Roxburgh (*typ. cons.*).

Note: Conservation superfluous: *Cassebeeria* Dennstedt, Hort. Malab. (1818), is not validly published by a mere reference to a species (H.M. **9**: *t. 65*).

5759. **Miconia** Ruiz et Pavon, Prodr. 60. 1794.
T.: *M. triplinervis* Ruiz et Pavon (Syst. 104. 1798).
(=) *Leonicenia* Scopoli, Intr. 212. 1777.
T.: *Fothergilla mirabilis* Aublet, Pl. Gui. 440. 1775.

Note 1: Tamonea Aublet, Pl. Guiane 440 *non* 659 (1775), was corrected by Aublet himself. The name is found in very few copies (cf. Jackson, Journ. Bot. **39**: 36. 1901). This name is to be regarded as not validly published.

Note 2: Fothergilla Aublet (1775; non Murray 1774) is illegitimate. *Leonicenia* Scopoli, Intr. 212 (1777), is the legitimate substitute, *Lieutautia* Buchoz, Pl. Nouvellem. Découv. *t. 7* (1779), is a second substitute.

5768. **Bellucia** Rafinesque, Sylva Tell. 92. 1838 trim. 4.
T.: *B. nervosa* Rafinesque, nom. illeg. (*Blakea quinquenervia* Aublet) [syn. tax.: *Bellucia grossularioides* (Linnaeus) Triana (Trans. Linn. Soc. **28**: 141. 1871, *Melastoma grossularioides* Linnaeus, Sp. Pl. 390. 1753].
(H) *Belluccia* Adanson, Fam. **2**: 344. 1763 prim. [RUTAC.].
≡ *Ptelea* Linnaeus 1753.
(≡) *Apatitia* Desvaux ex W. Hamilton, Prodr. Pl. Ind. Occ. 42. 1825.

Note: Bellucia Rafinesque was superfluous on publication because the type of *Apatitia* Desvaux ex W. Hamilton was cited.

5852. **Schefflera** J. R. et G. Forster, Char. Gen. Pl. 45. 1776.
T.: *S. digitata* J. R. et G. Forster.
(=) *Sciodaphyllum* P. Browne, Hist. Jamaica 190. 1756.
T.: *S. brownii* C. Sprengel (vide I.C.B.N. **1956**: 260).

UMBELLIFERAE (APIACEAE)

5938. **Anthriscus** Persoon, Syn. **1**: 320. 1805.
T.: *A. vulgaris* Persoon 1805 non Bernhardi 1800 (*Scandix anthriscus* Linnaeus) (*A. scandicina* Mansfeld, Repert. Sp. Nov. **46**: 309. 1939; *Caucalis scandicina* Wiggers, nom. illeg.) (*typ. cons.*).
(H) *Anthriscus* Bernhardi, Syst. Verz. Pfl. Erfurt **1**: 113. 1800 [UMBELL.].
T.: *A. vulgaris* Bernhardi (*Tordylium anthriscus* Linnaeus).
(=) *Chaerefolium* A. Haller, Hist. Stirp. Helv. **1**: 327. 1768.
T.: *Scandix cerefolium* Linnaeus (Sp. Pl. 257. 1753).

Note 1: It is doubtful whether *Chaerefolium* A. Haller (1768) was accepted by Haller himself; the name is used only in the heading and is not cited in the index. Other spellings for the same genus used in the same place are *Cerefolium* (preoccupied by *Cerefolium* Fabricius 1759) and *Chaerophyllum* (preoccupied by *Chaerophyllum* Linnaeus 1753).

Note 2: Caucalis scandicina Wiggers was a substitute name for *Scandix anthriscus* Linnaeus, and superfluous when published because Wiggers ought to have adopted the earlier epithet *scandix* from Scopoli's *Caucalis scandix* based on the same type. *Caucalis anthriscus* (Linnaeus) Scopoli was based on *Tordylium anthriscus* Linnaeus, a different plant, hence that combination could not be used either by Scopoli or by Wiggers for *Scandix anthriscus* Linnaeus under *Caucalis*. *Anthriscus anthriscus* is illegitimate and *A. vulgaris* Persoon and *A. scandix* (Scopoli) Ascherson are both later homonyms; *A. scandicina* Mansfeld is the next available name (the epithet being treated as new). For full references see Mansfeld, l.c.

†5956. **Bifora** G. F. Hoffmann, Gen. Umbellif. ed. 2. 191. 1816.
T.: *B. dicocca* G. F. Hoffmann, nom. illeg. [*Coriandrum testiculatum* Linnaeus, *B. testiculata* (Linnaeus) C. Sprengel ex Roemer et Schultes ('*Biforis*')].

Note: Conservation superfluous: (≡) *Anidrum* Necker, Elem. **1**: 188 (1790), was not validated before 1816.

5964. **Scaligeria** A. P. Decandolle, Coll. Mém. 5 [Mém. Fam. Ombellif.]: 70. 1 Sep 1829.
T.: *S. microcarpa* A. P. Decandolle.
(H) *Scaligera* Adanson, Fam. **2**: 323. 1763 prim. [LEGUM.].
≡ *Aspalathus* Linnaeus 1753.

5977. **Tauschia** Schlechtendal, Linnaea **9**: 607. post Feb 1835 ('1834').
T.: *T. nudicaulis* Schlechtendal.
(H) *Tauschia* Preissler, Flora **11**: 44. 21 Jan 1828 [ERIC.].
T.: *T. hederaefolia* Preissler.

5990. **Lichtensteinia** Chamisso et Schlechtendal, Linnaea **1**: 394. 1826.
T.: *L. lacera* Chamisso et Schlechtendal (*typ. cons.*).
(H) *Lichtensteinia* Willdenow, Mag. Ges. Naturf. Fr. Berlin **2**: 19. 1808 [LILIAC.].

Note: Lichtensteinia J. C. Wendland, Coll. Pl. **2**: 4. *t.* 39. (1810), is another homonym [LORANTH.].

†5998. **Trinia** G. F. Hoffmann, Gen. Umbellif. 92. 1814.
T.: *T. glaberrima* G. F. Hoffmann, nom. illeg. [*Seseli pumilum* Linnaeus, *T. pumila* (Linnaeus) H. G. L. Reichenbach] (*typ. cons.*).

Note: Conservation superfluous: (=) *Apinella* Necker, Elem. **1**: 191 (1790), was not validated before 1814.

6014. **Trachyspermum** Link, Enum. Hort. Berol. **1**: 267. 1821 sem. 1.
T.: *T. copticum* (Linnaeus) Link (*Ammi copticum* Linnaeus).
(≡) *Ammios* Moench, Meth. 99. 1794.

6015. **Cryptotaenia** A. P. Decandolle, Coll. Mém. 5 [Mém. Fam. Ombellif.]: 42. 1 Sep 1829.
T.: *C. canadensis* (Linnaeus) A. P. Decandolle (*Sison canadense* Linnaeus).
(≡) *Deringa* Adanson, Fam. **2**: 498. 1763 prim.

†6018. **Falcaria** Fabricius, Enum. 34. 1759.
T.: *F. vulgaris* Bernhardi (Syst. Verzeichn. Pfl. Erfurt 176. 1800; *Sium falcaria* Linnaeus).

Note 1: The early date makes conservation superfluous.

Note 2: Bernhardi's work was not seen.

6045. **Polemannia** Ecklon et Zeyher, Enum. 347. Apr 1837.
T.: *P. grossulariaefolia* Ecklon et Zeyher.
(H) *Polemannia* K. Bergius in Schlechtendal, Linnaea **1**: 250. 1826 [LILIAC.].
T.: *P. hyacinthiflora* Bergius.

6058. **Schulzia** C. Sprengel, Pl. Umbellif. Prodr. 30. 1813.
T.: *S. crinita* (Pallas) C. Sprengel (*Sison crinitum* Pallas).
(H) *Schultzia* Rafinesque, Med. Repos. N.Y. ser. 2. **5**: 356. Jul 1808 [GENTIAN.].
T.: *S. obolarioides* Rafinesque.

6064. **Kundmannia** Scopoli, Intr. 116. 1777.
T.: *K. sicula* (Linnaeus) A. P. Decandolle (Prodr. **4**: 143. Sep 1830; *Sium siculum* Linnaeus).
(≡) *Arduina* Adanson, Fam. **2**: 499. 1763 prim.

6070. **Selinum** Linnaeus, Sp. Pl. ed. 2. 350. Sep 1762.
T.: *S. carvifolia* (Linnaeus) Linnaeus (*Seseli carvifolia* Linnaeus) (*typ. cons.*).
(H) *Selinum* Linnaeus, Sp. Pl. 244. 1753 [UMBELL.].
LT.: *S. sylvestre* Linnaeus (vide Hitchcock, Prop. Brit. Bot. 139. 1929; I.C.B.N. **1956**: 261).

Note: The epithet *carvifolia* embodies an orthographic problem which is perhaps academic. *Carvi-* is the combining form of *Carum*. The change of *u* to *v* is purely typographic, these letters being at the time interchangeable. By modern standards *carvifolia* is an incorrect orthographic variant. It is, however, in general use.

6099. **Bonannia** Gussone, Fl. Sicul. Syn. **1**: 355. 1842.
T.: *B. resinifera* Gussone, nom. illeg. [*Ferula nudicaulis* C. Sprengel, Neue Entdeck. **2**: 149. 1821, *B. nudicaulis* (C. Sprengel) Rickett et Stafleu, comb. nov.].
(H) *Bonannia* Rafinesque, Specchio **1**: 115. 1 Apr 1814 [SAPIND.].
T.: *B. nitida* Rafinesque.

Note 1: Bonannia K. B. Presl, Fl. Sicul. **1**: 99 (1826) [CRUCIF.], is another illegitimate homonym.

Note 2: Gussone cited both *Ferula nudicaulis* C. Sprengel (1821) and *Laserpitium resinosum* [sic] J. et K. Presl, Delic. Prag. 137 (1822), as synonyms of his *B. resinifera*.

CORNACEAE

6154. **Alangium** Lamarck, Enc. **1**: 174. Dec 1783.
T.: *A. decapetalum* Lamarck (*typ. cons.*).
(=) *Angolam* Adanson, Fam. **2**: 85, 518. 1763 prim.
T.: 'H.M. 4 t. 17. p. 39' [*Alangium decapetalum* Lamarck].
(=) *Kara-Angolam* Adanson, Fam. **2**: 84, 532. 1763 prim.
T.: 'H.M. 4 t. 26'.

Note: (=) *Angolam* Adanson was spelled *Angolamia* by Scopoli (1777).

ERICACEAE

6189. **Loiseleuria** Desvaux, Journ. Bot. Desvaux ser. 2. **1**: 35. 1813.
T.: *L. procumbens* (Linnaeus) Desvaux (*Azalea procumbens* Linnaeus).
(≡) *Chamaecistus* Oeder, Fl. Dan. 4. *t.* 9. 1761.

†6191. **Rhodothamnus** H. G. L. Reichenbach in Mössler, Handb. ed. 2. **1**: 667, 688. 1827.
T.: *R. chamaecistus* (Linnaeus) H. G. L. Reichenbach (*Rhododendron chamaecistus* Linnaeus).

Note: Conservation superfluous: (≡) *Adodendrum* Necker, Elem. **1**: 214 (1790), was not validated until 1891 by O. Kuntze, Rev. Gen. Pl. **2**: 385.

†6195. **Daboecia** D. Don, Edinb. New Philos. Journ. **17**: 160. 1834.
T.: *D. polifolia* D. Don, nom. illeg. [*Vaccinium cantabricum* Hudson, Fl. Angl. 143. 1762 prim., *D. cantabrica* (Hudson) C. Koch, Dendrol. **2**: 132. 1872; *Erica daboecii* Linnaeus, Sp. Pl. ed. 2. 509. Sep 1762, nom. illeg.].

Note 1: Conservation superfluous: (≡) *Boretta* Necker, Elem. **1**: 212 (1790), was not validated until 1891 by Baillon, Hist. Pl. **11**: 173 (1891).

Note 2: Since the name is derived from the Gaelic St. Dabeoc, there seems to be no justification for the diaeresis of I.C.B.N. It was written as above by Don.

6200. **Lyonia** Nuttall, Gen. **1**: 266. Mai (sero) 1818.
T.: *L. ferruginea* (Walter) Nuttall (*Andromeda ferruginea* Walter).
(H) *Lyonia* Rafinesque, Med. Repos. N.Y. ser. 2. **5**: 353. Jul 1808 [POLYGONAC.].
≡ *Polygonella* A. Michaux 1803.

Note: Lyonia S. Elliott, Sketch Bot. S.C. & Ga. **1**: 316 (Oct 1817) [ASCLEP.], is an illegitimate later homonym of *Lyonia* Rafinesque (1808).

†6215. **Gaylussacia** Humboldt, Bonpland et Kunth, Nova Gen. Sp. **3**: ed. fol. 215, ed. qu. 275. Jul 1819.
T.: *G. buxifolia* Humboldt, Bonpland et Kunth.

Note: Conservation superfluous: *Adnaria* Rafinesque, Fl. Ludov. 56 (1817), belongs to the *Styracaceae* (*A. odorata* Rafinesque = *Styrax americana* Lamarck, fide Camp, Castanea **6**: 82. 1941).

6232. **Cavendishia** Lindley, Bot. Reg. **21**: sub *t. 1791.* 1 Sep 1835.
T.: *C. nobilis* Lindley.
(H) *Cavendishia* S. F. Gray, Nat. Arr. Brit. Pl. **1**: 678, 689. 10 Sep 1821 [HEPAT.].
(=) *Chupalon* Adanson, Fam. **2**: 164. 1763 prim.

6251. **Lebetanthus** Endlicher, Gen. Pl. 1411 ('*Lebethanthus*'), 1458. Feb-Mar 1841.
T.: *L. americanus* (W. J. Hooker) Endlicher (*Prionitis americana* W. J. Hooker) (*typ. cons.*).
(V) *Lebethanthus* Endlicher, Gen. Pl. 1411. Feb-Mar 1841.
(≡) *Allodape* Endlicher, Gen. Pl. 749. Mar 1839.

6254. **Richea** R. Brown, Prodr. 555. Mar 1810.
T.: *R. dracophylla* R. Brown.
(H) *Richea* Labillardière, Voy. **1**: 186. *t. 16.* 1799 [COMPOS.].
T.: *R. glauca* Labillardière.
(=) *Cystanthe* R. Brown, Prodr. 555. Mar 1810.
T.: *C. sprengelioides* R. Brown.

Note: Richaeia Thouars, Gen. Nov. Madag. 25 (1808), is a later homonym of *Richea* Labillardière (1799) (see also sub 5528).

6260. **Epacris** Cavanilles, Ic. **4**: 25. *t. 344.* 1797.
T.: *E. longiflora* Cavanilles (*typ. cons.*).
(H) *Epacris* J. R. et G. Forster, Char. Gen. Pl. 19. 1776 [EPACR.].
LT.: *E. longifolia* J. R. et G. Forster (I.C.B.N. **1956**: 262).

6262p. **Leucopogon** R. Brown, Prodr. 541. Mar 1810.
T.: *L. lancolatus* R. Brown, nom. illeg. (*typ. cons.*).
(=) *Perojoa* Cavanilles, Ic. **4**: 29. 1797.
T.: *P. microphylla* Cavanilles.

Note: L. lanceolatus R. Brown is illegitimate. He cites *Styphelia lanceolata* J. E. Smith, Spec. Bot. Nov. Holl. **1**: 49 (Dec 1793) ('*exclus. synonymis*'), itself illegitimate, and he should have taken up the earliest of the two other epithets which he cites: *S. gnidium* Ventenat, Jard. Malm. 23 (Jul 1803), and *S. parviflora* Andrews, Bot. Repos. *t. 287* (1 Mar 1803). Lindley, using the combination *L. parviflorus,* Bot. Reg. *t. 1560* (1 Feb 1833), says that *L. lanceolatus* R. Brown was *not* the same as *S. parviflora* Andrews, and that *S. gnidium* Ventenat "has been shown by Mr. Cunningham to be equally distinct." Lindley's use of *L. lanceolatus,* however, is without argument. We have not been able to find a legitimate name for the type-species.

6275. **Shortia** Torrey et Gray, Am. Journ. Sci. **42**: 48. 1842.
T.: *S. galacifolia* Torrey et Gray.
(H) *Shortia* Rafinesque, Aut. Bot. 16. 1840 [CRUCIF.].
T.: *S. dentata* Rafinesque (*Arabis dentata* Torrey et Gray, non Clairville 1811).

6277. **Galax** Rafinesque, Med. Repos. N.Y. **5**: 353. Jun 1808.
T.: *G. rotundifolia* (Michaux) Pursh, (Fl. Am. Sept. **2**: 446. 1814) (*Erythrorhiza rotundifolia* A. Michaux).
(H) *Galax* Linnaeus, Sp. Pl. 200. 1753; Gen. Pl. ed. 5. 93. 1754 [HYDROPH.].
T.: *G. aphylla* Linnaeus.
(≡) *Erythrorhiza* A. Michaux, Fl. Bor.-Am. **2**: 34. 19 Mar 1803.

Note 1: The name *Galax* is by Article 13, Note 3 associated with the corresponding description in Gen. Pl. ed. 5 93 (1754), which applies only to *Viticella* Mitchell (Hydrophyllaceae). The conservation, however, was intended to maintain *Galax* in the sense of "Anonymos s. Belvedere, *Gron. virg.* 25," the other element cited by Linnaeus in 1753 but not associated with any description. *G. aphylla* Linnaeus is necessarily the type of the *rejected* genus *Galax* Linnaeus based on *Viticella* Mitchell, since *Galax* Linnaeus can be interpreted in no other sense.

Note 2: (≡) *Solenandria* Ventenat, Jard. Malm. *t. 69.* (Sep 1804), is a superfluous name for (≡) *Erythrorhiza* Michaux (1803). (=) *Blandfordia* Andrews, Bot. Repos. **5**: 6. 343 (Feb 1804), is not available because of *Blandfordia* J. E. Smith (1804) (*nom. cons.* 1021).

6285. **Ardisia** Swartz, Prodr. 3, 48. Jun-Jul 1788.
T.: *A. tinifolia* Swartz (*typ. cons.*).
(=) *Vedela* Adanson, Fam. **2**: 502. 1763 prim.
T.: '*Viscioides* Plum. M.S. vol. 6. t. 100'.
(=) *Katoutheka* Adanson, Fam. **2**: 159. 1763 prim.
T.: 'H.M. 4. t. 26'.
(=) *Icacorea* Aublet, Pl. Guiane, Suppl. 1. 1775.
T.: *I. guianensis* Aublet.
(=) *Bladhia* Thunberg, Nova Gen. Pl. 6. 24 Nov 1781.
T.: *B. japonica* Thunberg.

6288. **Heberdenia** Banks ex A. Decandolle, Ann. Sci. Nat. Bot. ser. 2. **16**: 79. Aug 1841.
T.: *H. excelsa* Banks ex A. Decandolle (in A. P. Decandolle, Prodr. **8**: 106. Mar 1844), nom. illeg. [*Anguillaria bahamensis* J. Gaertner, *H. bahamensis* (J. Gaertner) Sprague].

Note: The conservation has not become superfluous through the conservation of *Anguillaria* R. Brown (1810) [LILIAC.] (974). *Herberdenia* itself was superfluous on publication, being identical with (≡) *Anguillaria* J. Gaertner, Fruct. **1**: 372 (1788), which was then still available.

6291. **Labisia** Lindley, Bot. Reg. **31**: ad *t. 48.* 1 Sep 1845.
T.: *L. pothoina* Lindley.
(=) *Angiopetalum* Reinwardt, Syll. Pl. **2**: 7. Jan-Feb 1826 [Flora **8** (2) (Beil.): 7] ('1828').
T.: *A. punctatum* Reinwardt.

6301. **Cybianthus** C. F. P. Martius, Nova Gen. Sp. **3**: 87. 1831 ('1829').
T.: *C. penduliflorus* C. F. P. Martius (*typ. cons.*).
(=) *Peckia* Velloso, Fl. Flum. 51. 1825 prim.

6304. **Wallenia** Swartz, Prodr. 2, 31. Jun-Jul 1788.
T.: *W. laurifolia* (N. J. Jacquin) Swartz (*Petesioides laurifolium* N. J. Jacquin).
(≡) *Petesioides* N. J. Jacquin, Sel. Stirp. Am. Hist. 17. 1763 sem. 2.

6310. **Embelia** N. L. Burman, Fl. Ind. 62. 1768.
T.: *E. ribes* N. L. Burman.
(≡) *Ghesaembilla* Adanson, Fam. **2**: 449. 1763 prim.
(=) *Pattara* Adanson, Fam. **2**: 447. 1763 prim.
T.: 'H.M. 5. t. 11'.

PRIMULACEAE

6318. **Douglasia** Lindley, Quart. Journ. Sci. Lit. Arts **1827**: 385. 1827 trim. 4.
T.: *D. nivalis* Lindley.
(H) *Douglassia* P. Miller, Gard. Dict. Abr. ed. 4. 1754 [VERBEN.].
(=) *Vitaliana* Sesler in Donati, Auszug Natur-Gesch. Adriat. Meers 66. 1753.
T.: *V. primulaeflora* Bertolini (Fl. Ital. **2**: 368. 1835) (*Primula vitaliana* Linnaeus).

Note: Other homonyms: *Douglassia* Schreber, Gen. **2**: 809 (1791) [LAURAC.], *Douglassia* Adanson, Fam. **2**: 200 (1763) [VERBEN.].

PLUMBAGINACEAE

6350. **Armeria** (A. P. Decandolle) Willdenow, Enum. Pl. Hort. Berol. 333. 1809 sem. 1.
T.: *A. vulgaris* Willdenow (*Statice armeria* Linnaeus).
(≡) *Statice* Linnaeus, Sp. Pl. 274. 1753.
LT.: *S. armeria* Linnaeus (vide P. Miller, Gard. Dict. Abr. ed. 4. 1754; Hitchcock, Prop. Brit. Bot. 143. 1929).

†6351. **Limonium** P. Miller, Gard. Dict. Abr. ed. 4.
T.: *L. vulgare* P. Miller (*Statice limonium* Linnaeus) (*typ. cons.*).

Note: *Statice* having been lectotypified by *Statice armeria* Linnaeus (see no. 6350), the conservation of *Limonium* P. Miller has become superfluous.

SAPOTACEAE

6365. **Labatia** Swartz, Prodr. 2, 32. Jun-Jul 1788.
T.: *L. sessiliflora* Swartz.
(H) *Labatia* Scopoli, Intr. 197. 1777 [CELASTR.].
≡ *Macoucoua* Aublet 1777.

†6370. **Argania** Roemer et Schultes, Syst. **4**: xlvi, 502. 1819 sem. 1.
T.: *A. sideroxylon* Roemer et Schultes, nom. illeg. [*Sideroxylon spinosum* Linnaeus, *A. spinosa* (Linnaeus) Skeels].

Note: Conservation superfluous: (=) *Verlangia* Necker, Elem. **2**: 125 (1790), was not validated until 1838 by Rafinesque (Sylva Tell. 33).

6373. **Dipholis** A. Decandolle in A. P. Decandolle, Prodr. **8**: 188. Mar 1844.
T.: *D. salicifolia* (Linnaeus) A. Decandolle (*Achras salicifolia* Linnaeus).
(=) *Spondogona* Rafinesque, Sylva Tell. 35. 1838 trim. 4.
T.: *S. nitida* Rafinesque, nom. illeg. (*Bumelia pentagona* Swartz).

6374. **Bumelia** Swartz, Prodr. 3, 49. Jun-Jul 1788.
T.: *B. retusa* Swartz (*typ. cons.*).
(=) *Robertia* Scopoli, Intr. 154. 1777.
T.: *Sideroxylon decandrum* Linnaeus (Mant. 48. 1767).

6382. **Niemeyera** F. Mueller, Fragm. **7**: 114. Dec 1870.
T.: *N. prunifera* (F. Mueller) F. Mueller (*Chrysophyllum pruniferum* F. Mueller).
(H) *Niemeyera* F. Mueller, Fragm. **6**: 96. Dec 1867 [ORCHID.].
T.: *N. stylidioides* F. Mueller.

6384. **Cryptogyne** J. D. Hooker in Bentham et Hooker, Gen. Pl. **2**: 656. Mai 1876.
T.: *C. gerrardiana* J. D. Hooker.
(H) *Cryptogyne* Cassini, Dict. Sci. Nat. **50**: 491, 493, 498. Nov 1827 [COMPOS.].
T.: *C. absinthioides* Cassini.

EBENACEAE

6408. **Brachynema** Bentham, Trans. Linn. Soc. **22**: 126. 1857.
T.: *B. ramiflorum* Bentham.
(H) *Brachynema* Griffith, Notul. Pl. Asiat. **4**: 176. 1854 [VERBEN.].
T.: *B. ferruginea* Griffith.

Note: Another homonym: *Brachynema* F. Mueller, Fragm. **3**: 90 (Oct 1862) [SAXIFR.].

STYRACACEAE

6410. **Halesia** S. Ellis ex Linnaeus, Syst. Nat. ed. 10. 1045, 1369. Mai-Jun 1759.
T.: *H. carolina* Linnaeus.
(H) *Halesia* P. Browne, Hist. Jamaica 205. 1756 [RUBIAC.].
T.: *Guettarda argentea* Lamarck (vide Standley, N. Am. Fl. **32**: 245. 21 Dec 1934).

OLEACEAE

6421. **Forsythia** Vahl, Enum. **1**: 39. 1804 sem. 2.
T.: *F. suspensa* (Thunberg) Vahl (*Syringa suspensa* Thunberg).
(H) *Forsythia* Walter, Fl. Carol. 153. 1788 [SAXIFR.].
T.: *F. scandens* Walter.

6422. **Schrebera** Roxburgh, Pl. Corom. **2**: 1. *t. 101.* Mai 1799.
T.: *S. swietenioides* Roxburgh.
(H) *Schrebera* Linnaeus, Sp. Pl. ed. 2. 1662. Jul 1763 [CONVOLV.].
T.: *S. schinioides* Linnaeus.

Note: Other homonyms: *Schrebera* Retzius, Obs. **6**: 25 (1791) [CELASTR.], and *Schrebera* Thunberg, Prodr. Pl. Cap. 28, *t.* (1794) [CELASTR.].

6428. **Linociera** Swartz ex Schreber, Gen. **2**: 784. 1791 sem. 1.
T.: *L. ligustrina* (Swartz) Swartz (*Thouinia ligustrina* Swartz).
(=) *Mayepea* Aublet, Pl. Guiane 81. 1775.
T.: *M. guianensis* Aublet.

Note 1: Superfluous names for *Mayepea* Aublet (1775): *Freyeria* Scopoli, Intr. 208 (1777), and *Ceranthus* Schreber, Gen. **1**: 14 (1789).

Note 2: (=)*Thouinia* Linnaeus f., Suppl. 9, 89 (1781), is not available because of *Thouinia* Poiteau (1804) (*nom. cons.*) (4733).

LOGANIACEAE

6450. **Logania** R. Brown, Prodr. 454. Mar 1810.
T.: *L. floribunda* R. Brown, nom. illeg. [*Euosma albiflora* Andrews, *L. albiflora* (Andrews) Druce] (*typ. cons.*).
(H) *Loghania* Scopoli, Intr. 236. 1777 [MARCGRAV.].
≡ *Souroubea* Aublet 1775.
(≡) *Euosma* Andrews, Bot. Repos. **8**: *t. 520.* Mai 1808.

6468. **Peltanthera** Bentham in Bentham et Hooker, Gen. Pl. **2**: 797. Mai 1876.
T.: *P. floribunda* Bentham.
(H) *Peltanthera* Roth, Nov. Pl. Sp. 132. 1821 prim. [APOCYN.].
T.: *P. solanacea* Roth.

GENTIANACEAE

6483. **Belmontia** E. Meyer, Comm. Pl. Afr. Austr. 183. 1873.
T.: *B. cordata* E. Meyer (*typ. cons.*).
(≡) *Parrasia* Rafinesque, Fl. Tell. **3**: 78. Nov-Dec 1837 ('1836').

Note: The reference by E. Meyer to the non-existant '*Sebaca cordata* R. Br.' should be taken as a reference to Brown's specimen and not to *Exacum cordatum* Linnaeus f.

6484. **Enicostema** Blume, Bijdr. 848. 1826 sem. 2.
T.: *E. littorale* Blume.
(=) *Hippion* F. W. Schmidt, Arch. Bot. Roemer **1**(1): 9-11. 1796.

†6501. **Bartonia** Mühlenberg ex Willdenow, Neue Schr. Ges. Naturf. Fr. Berlin **3**: 444. 1801.
T.: *B. tenella* Willdenow [syn. tax.: *B. virginica* (Linnaeus) Britton, Sterns et Poggenburg (Prel. Cat. 36. 25 Apr 1888), *Sagina virginica* Linnaeus].

Note: Conservation superfluous: (=) *Agina* Necker, Elem. **2**: 153 ('253') (1790) was not validated until Dec 1903 by Post et Kuntze, Lex. Phan. 14.

†6504. **Orphium** E. Meyer, Comm. Pl. Afr. Austr. 181. 1837.
T.: *O. frutescens* (Linnaeus) E. Meyer (*Chironia frutescens* Linnaeus).

Note: Conservation superfluous: (≡) *Valerandia* Necker, Elem. **2**: 33 (1790) was not validated until 5 Nov 1891 by O. Kuntze, Rev. Gen. Pl. **2**: 431.

†6513. **Halenia** Borckhausen, Arch. Bot. Roemer **1**(1): 25. 1796.
T.: *H. sibirica* Borckhausen, nom. illeg. [*Swertia corniculata* Linnaeus, *H. corniculata* (Linnaeus) Druce].

Note: Conservation superfluous: *Tetragonanthus* J. G. Gmelin was published in synonymy under *Swertia.*

6526. **Schultesia** C. F. P. Martius, Nova Gen. Sp. **2**: 103. 1827.
T.: *S. crenuliflora* C. F. P. Martius (*typ. cons.*).
(H) *Schultesia* C. Sprengel, Pugil. **2**: 17. 1815 [GRAM.].
T.: *S. petraea* (Thunberg) C. Sprengel (*Chloris petraea* Thunberg).

Note: Other homonyms: *Schultesia* H. A. Schrader, Gött. Gelehrte Anz. **1**: 708 (5 Mai 1821) [AMARANTH.], and *Schultesia* Roth, Enum. Pl. Phaen. **1**: 690 (1827) [CAMPAN.].

6544. **Villarsia** Ventenat, Choix *t. 9.* 1803.
T.: *V. ovata* (Linnaeus f.) Ventenat (*Menyanthes ovata* Linnaeus f.) (*typ. cons.*).
(H) *Villarsia* J. G. Gmelin, Syst. **2**: 306, 447. 1791 sero [GENTIAN.].
T.: *V. aquatica* J. G. Gmelin.
(=) *Renealmia* Houttuyn, Nat. Hist. ser. 2. **8**: 335. 1777.
T.: *R. capensis* Houttuyn.

APOCYNACEAE

6559. **Carissa** Linnaeus, Syst. Nat. ed. 12. 189; Mant. 7, 52. Oct 1767.
T.: *C. carandas* Linnaeus.
(≡) *Carandas* Adanson, Fam. **2**: 171, 532. 1763 prim.

Note: (=) *Arduina* P. Miller ex Linnaeus, Mant. 7, 52 (1767) ('*Arduinia*' in pagina posteriori), is not available because of *Arduina* Adanson, Fam. **2**: 499 (1763).

6562. **Landolphia** Beauvois, Fl. Oware **1**: 54. 1805.
T.: *L. owariensis* Beauvois.
(=) *Pacouria* Aublet, Pl. Guiane 268. 1775.
T.: *P. guianensis* Aublet.
(=) *Vahea* Lamarck, Ill. *t. 169.* 1792-1797.
T.: *V. gummifera* Lamarck, Ill. **2**: 292. 1819.

Note: (=) *Alstonia* Scopoli, Intr. 198 (1777), (≡) *Pacouria* Aublet (1775).

6564. **Willughbeia** Roxburgh, Pl. Corom. **3**: 77. *t. 280.* Feb-Mar 1820.
T.: *W. edulis* Roxburgh.
(H) *Willughbeja* Scopoli ex Schreber, Gen. **1**: 162. 1789 sem. 1 [APOCYN.].

6583. **Alstonia** R. Brown, Mem. Wern. Soc. **1**: 75. 1811 (preprint 1809).
T.: *A. scholaris* (Linnaeus) R. Brown (*Echites scholaris* Linnaeus) (*typ. cons.*).
(H) *Alstonia* Scopoli, Intr. 198. 1777 [APOCYN.].
≡ *Pacouria* Aublet 1775 (vide 6562).
(=) *Pala* A. L. Jussieu, Ann. Mus. Hist. Nat. Paris **15**: 346. 1810 sem. 2.

Note 1: Another homonym: *Alstonia* Mutis ex Linnaeus f., Suppl. 39, 264 (1781) [SYMPLOC.].
Note 2: Pala A. L. Jussieu dates from 1810; we propose to keep it on the list since the date of 1809 for R. Brown's publication is still open to some doubt (see bibliography).

6588. **Aspidosperma** Martius et Zuccarini, Flora **7**(1) (Beil. 4): 135. 1824.
T.: *A. tomentosum* Martius et Zuccarini (*typ. cons.*).
(=) *Macaglia* L. C. Richard ex Vahl, Skr. Naturh. Selsk. Kjøbenh. **6**: 107. 1810.

6616. **Alyxia** Banks ex R. Brown, Prodr. 469. Mar 1810.
T.: *A. spicata* R. Brown (*typ. cons.*).
(=) *Gynopogon* J. R. et G. Forster, Char. Gen. Pl. 35. 1776.

6632. **Thevetia** Linnaeus, Opera Varia (Soulsby no. 9) 212. 1758.
T.: *T. ahouai* (Linnaeus) A. Decandolle (in A. P. Decandolle, Prodr. **8**: 345. Mar 1844) (*Cerbera ahouai* Linnaeus) (*typ. cons.*).
(≡) *Ahouai* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

6639. **Urceola** Roxburgh, Asiat. Res. **5**: 169. 1799.
T.: *U. elastica* Roxburgh.
(H) *Urceola* Vandelli, Fl. Lusit. Bras. 8. 1788 [PHAN.-INC. SED.].

6670. **Spirolobium** Baillon, Bull. Soc. Linn. Paris **1**: 773. 1889.
T.: *S. cambodianum* Baillon.
(H) *Spirolobium* Orbigny, Voy. Amér. Mérid. **8** (Atlas) Bot. (1): *t. 13.* 1839 (?, '1847') [LEGUM.].
T.: *S. australe* Orbigny.

6677. **Chonemorpha** G. Don, Gen. Hist. **4**: 76. 1837.
T.: *C. macrophylla* G. Don (*typ. cons.*).
(=) *Belutta-Kaka* Adanson, Fam. **2**: 172. 1763 prim.

†6683. **Ichnocarpus** R. Brown, Mem. Wern. Soc. **1**: 61. 1811 (preprint 1809).
T.: *I. frutescens* (Linnaeus) R. Brown (*Apocynum frutescens* Linnaeus).

Note: Conservation superfluous: *Quirivelia* Poiret in Lamarck, Enc. **6**: 42 (1804), was not validly published (*nomen nudum,* merely reference to *Apocynum frutescens* Linnaeus).

6691. **Parsonsia** R. Brown, Mem. Wern. Soc. **1**: 64. 1811 (preprint 1809).
T.: *P. capsularis* (G. Forster) R. Brown ex Endlicher, Ann. Wiener Mus. **1**: 175. 1836 (*Periploca capsularis* G. Forster) (*typ. cons.*).
(H) *Parsonsia* P. Browne, Hist. Jamaica 199. 1756 [LYTHRAC.].
T.: *Lythrum parsonsia* Linnaeus (Syst. Nat. ed. 10. 1045. 1759).

6702. **Prestonia** R. Brown, Mem. Wern. Soc. **1**: 69. 1811 (preprint 1809).
T.: *P. tomentosa* R. Brown.
Prestonia Scopoli, Intr. 281. 1777 [MALVAC.] (etiam vide 5007).
≡ *Lass* Adanson 1763.

ASCLEPIADACEAE (incl. PERIPLOCACEAE)

6726. **Camptocarpus** Decaisne in A. P. Decandolle, Prodr. **8**: 493. Mar 1844.
T.: *C. mauritianus* (Lamarck) Decaisne (*Cynanchum mauritianum* Lamarck) (*typ. cons.*).
(H) *Camptocarpus* C. Koch, Linnaea **17**: 304. 1843 [BORAG.].
T.: *C. orientalis* (Linnaeus) C. Koch (*Anchusa orientalis* Linnaeus).
≡ *Oskampia* Moench 1794.

6772. **Schubertia** C. F. P. Martius, Nov. Gen. Sp. **1**: 55. *t.* 33. 1824.
T.: *S. multiflora* C. F. P. Martius (*typ. cons.*).
(H) *Schubertia* Mirbel, Nouv. Bull. Soc. Philom. Paris **3**: 123. Aug. 1812 [TAXOD.].
T.: *S. disticha* (Linnaeus) Mirbel (*Cupressus disticha* Linnaeus).
≡ *Taxodium* L. C. Richard (1810) 1826.

6857. **Oxypetalum** R. Brown, Mem. Wern. Soc. **1**: 41. 1811 (preprint 1809).
T.: *O. banksii* J. A. Schultes (in Roemer et Schultes, Syst. **6**: 91. 1820 sero).
(=) *Gothofreda* Ventenat, Choix *t. 60.* 1808.
T.: *G. cordifolia* Ventenat.

6889. **Pectinaria** Haworth, Suppl. Pl. Succ. 14. 1819.
T.: *P. articulata* (Haworth) Haworth (*Stapelia articulata* Haworth).

(H) *Pectinaria* Bernhardi, Syst. Verz. Pfl. Erfurt **1**: 113. 1800 [UMBEL.].
T.: *P. vulgaris* Bernhardi, nom. illeg. (*Scandix pecten-veneris* Linnaeus 1753).
≡ *Scandix* Linnaeus 1753.

CONVOLVULACEAE

†6979. **Bonamia** Thouars, Hist. Vég. Iles France, Réun. Madag. 33. *t.* 8. 1804.
T.: *B. madagascariensis* Poiret (in Lamarck, Enc. Suppl. **1**: 677. 1810) (*typ. cons.*).

Note: Conservation superfluous; we have not been able to trace a validating publication of (H) *Bonamya* Necker, Elem. **1**: 316. 1790 [LABIAT.].

6994. **Calystegia** R. Brown, Prodr. 483. Mar 1810.
T.: *C. sepium* (Linnaeus) R. Brown (*Convolvulus sepium* Linnaeus) (*typ. cons.*).

(≡) *Volvulus* Medikus, Philos. Bot. **2**: 42. 1791.

7003. **Pharbitis** Choisy, Mém. Soc. Phys. Hist. Nat. Genève **6**: 438. 1833.
T.: *P. hispida* Choisy, nom. illeg. [*P. purpurea* (Linnaeus) J. O. Voigt, *Convolvulus purpureus* Linnaeus] (*typ. cons.*).

(≡) *Convolvuloides* Moench, Meth. 451. 1794.
(=) *Diatremis* Rafinesque, Ann. Gen. Sci. Phys. **8**: 271. 1821.
T.: *Convolvulus nil* Linnaeus.
(=) *Diatrema* Rafinesque, Herb. Raf. 80. 1833 med.
T.: *D. trichocarpa* (S. Elliott) Rafinesque, nom. illeg. (*Ipomoea trichocarpa* S. Elliott, nom. illeg., *Convolvulus carolinus* Linnaeus).

HYDROPHYLLACEAE

7022. **Nemophila** Nuttall, Journ. Acad. Phila. **2**(1): 179. 1822 (med.?); in W. Barton, Fl. N. Am. **2**: 71. 1822 sem. 2.
T.: *N. phacelioides* Nuttall.

(=) *Viticella* J. Mitchell, Diss. Brev. Bot. Zool. 42. 1769.

Note: (=) *Galax* Linnaeus, Sp. Pl. 200 (1753), is not available because of *Galax* Rafinesque 1808 (*nom. cons.*) (6277).

7023. **Ellisia** Linnaeus, Sp. Pl. ed. 2. 1662. Jul 1763.
T.: *E. nyctelea* (Linnaeus) Linnaeus (*Ipomoea nyctelea* Linnaeus).

(H) *Ellisia* P. Browne, Hist. Jamaica 262. 1756 [VERBEN.].
T.: *E. acuta* Linnaeus (Syst. Nat. ed. 10. 1121. 1759) (*Duranta ellisia* Linnaeus, Sp. Pl. ed. 2. 888. 1763).
(=) *Macrocalyx* Ehret ex Trew, Nova Acta Acad. Leop.-Carol. **2**: 332. 1761.

Note: Since (=) *Macrocalyx* Ehret (1761) is rejected, the same should be the case with *Colpophyllos* Ehret ex Trew, Nova Acta Acad. Leop.-Carol. **2**: 332 (1761), which was proposed simultaneously by Ehret as an alternative name for *Macrocalyx*.

7029. **Hesperochiron** S. Watson, Bot. U.S. Geol. Expl. 40th Par.
T.: *H. californicus* (Bentham) S. Watson (*Ourisia californica* Bentham).

(=) *Capnorea* Rafinesque, Fl. Tell. **3**: 74. Nov-Dec 1837 ('1836').
T.: *C. nana* (Lindley) Rafinesque (*Nicotiana nana* Lindley).

7033. **Nama** Linnaeus, Syst. Nat. ed. 10. 950. Mai-Jun 1759.
T.: *N. jamaicensis* Linnaeus (*typ. cons.*; etiam vide Choisy in A. P. Decandolle, Prodr. **10**: 182. 1846).

(H) *Nama* Linnaeus, Sp. Pl. 226. 1753 [HYDROPH.].
T.: *N. zeylanica* Linnaeus ('*zaylanica*').

†7035. **Wigandia** Humboldt, Bonpland et Kunth, Nova Gen. Sp. **3**: ed. fol. 98, ed. qu. 126. Feb 1819.
T.: *W. caracasana* Humboldt, Bonpland et Kunth (*typ. cons.*).

Note: Conservation superfluous; the name (H) *Wigandia* Necker, Elem. **1**: 95 (1790) [COMPOS.], was not validated until 1832 by Lessing, Syn. Gen. Comp. 362.

†7037. **Hydrolea** Linnaeus, Sp. Pl. ed. 2. 328. Sep 1762.
T.: *H. spinosa* Linnaeus.

Note: Conservation now superfluous: (=) *Nama* Linnaeus (1753) (see sub 7033) is not available because of *Nama* Linnaeus (1759) (*nom. cons.*).

BORAGINACEAE

7042. **Bourreria** P. Browne, Hist. Jamaica 168. 1756 [*Beureria* in ind. p. 492].
T.: *B. succulenta* N. J. Jacquin (Enum. Pl. Carib. 14. Mai 1760) (*typ. cons.*) [syn. tax.: *Cordia bourreria* Linnaeus, identical with P. Browne's original species].

(H) *Beureria* Ehret, Pl. Papil. Rar. *t. 13.* 1755 [CALYCANTH.].

Note: Although the orthography *Bourreria* is conserved, it was probably by oversight. The genus was named after Johann Ambrosius Beurer, and the name appears as *Beureria* in the index. Indeed only on this supposition can Ehret's name be considered a homonym!

7056. **Trichodesma** R. Brown, Prodr. 496. Mar 1810.
T.: *T. zeylanicum* (N. L. Burman) R. Brown (*Borago zeylanica* N. L. Burman) (*typ. cons.*).

(=) *Borraginoides* Boehmer in Ludwig, Def. Gen. Pl. 18. 1760.
T.: *Borago indica* Linnaeus, Sp. Pl. 137. 1753.

Note: (=) *Pollichia* Medikus, Bot. Beob. 247 (1784), is a superfluous name for *Borraginoides* Boehmer (1760). It is rejected in favour of *Pollichia* W. Aiton (1789) (*nom. cons.*) (2467).

7082. **Amsinckia** J. G. C. Lehmann, Delect. Sem. Hort. Hamburg **1831**: 1, 7. 1831.
T.: *A. lycopsoides* Lehmann.

Note: Conservation superfluous: (=) *Benthamia* Lindley, Intr. Nat. Syst. 241 (1830), is, in our opinion, not validly published and illegitimate anyhow on account of *Benthamia* A. Richard, Mém. Soc. Hist. Nat. Paris **4**: 37 (1828).

7097. **Alkanna** Tausch, Flora **7**: 234. 21 Apr 1824.
T.: *A. tinctoria* (Linnaeus) Tausch (*Lithospermum tinctorium* Linnaeus) (*typ. cons.*).

(H) *Alkanna* Adanson, Fam. **2**: 444. 1763 prim. [LYTHR.].
≡ *Lawsonia* Linnaeus 1753.

7102. **Mertensia** Roth, Catalecta **1**: 34. 1797.
T.: *M. pulmonarioides* Roth.

(=) *Pneumaria* J. Hill, Veg. Syst. **7**: 40. 1764.

7124. **Rochelia** H. G. L. Reichenbach, Flora **7**: 243. 28 Apr 1824.
T.: *R. saccharata* H. G. L. Reichenbach, nom. illeg. [*Lithospermum dispermum* Linnaeus f., *R. disperma* (Linnaeus f.) R. Wettstein].
(H) *Rochelia* Roemer et Schultes, Syst. **4**: xi, 108. 1819 sem. 1 [BORAG.].
≡ *Lappula* Fabricius 1759.

post 7124. **Vaupelia** A. Brand, Repert. Sp. Nov. **13**: 82. 1914.
T.: *V. barbata* (Vaupel) A. Brand (*Trichodesma barbatum* Vaupel).
(H) *Vaupellia* Grisebach, Fl. Brit. W. Ind. 460. 1861 [BORAG.].
T.: *V. calycina* Grisebach.

Note: Strictly speaking these two names are not homonyms but they have been treated as variants; there is serious risk of confusion because both refer to Boraginaceae.

7139. **Urbania** R. Philippi, Verz. Antofagasta Pfl. 60. 1891.
T.: *U. pappigera* R. Philippi (*typ. cons.*).
(H) *Urbania* Vatke, Oesterr. Bot. Zeitschr. **25**: 10. 1875 [SCROPH.].
T.: *U. lyperiaefolia* Vatke.

†7148. **Bouchea** Chamisso, Linnaea **7**: 252. 1832.
T.: *B. pseudogervao* (A. Saint-Hilaire) Chamisso (*Verbena pseudogervao* A. Saint-Hilaire) (*typ. cons.*).

Note: Conservation superfluous: (=)*Denisaea* Necker, Elem. **1**: 306 (1790), was not validated until 28 Sep 1898 by O. Kuntze, Rev. Gen. Pl. **3**(2): 250.

7151. **Stachytarpheta** Vahl, Enum. **1**: 205. 1804 sem. 2.
T.: *S. jamaicensis* (Linnaeus) Vahl (*Verbena jamaicensis* Linnaeus) (*typ. cons.*).
(≡) *Valerianoides* Medikus, Philos. Bot. **1**: 177. 1789.
T.: *Verbena jamaicensis* Linnaeus.
(=) *Vermicularia* Moench, Meth. Suppl. 150. 1802.

Note: (=) *Sherardia* Adanson, Fam. **2**: 198 (1763), is not available because of *Sherardia* Linnaeus, Sp. Pl. 102; Gen. Pl. ed. 5. 45 (1753, 1754).

7156. **Amasonia** Linnaeus f., Suppl. 48, 294. 1781 sem. 2.
T.: *A. erecta* Linnaeus f.
(=) *Taligalea* Aublet, Pl. Guiane 625. 1775.
T.: *T. campestris* Aublet.

7157. **Casselia** Nees et Martius, Nova Acta Acad. Leop.-Carol. **11**: 73. 1823.
T.: *C. serrata* Nees et Martius (*typ. cons.*).
(H) *Casselia* Dumortier, Comment. 21. 1822 [BORAG.].
≡ *Mertensia* Roth 1797 (*nom. cons.*) (7102).

7181. **Tectona** Linnaeus f., Suppl. 20 ('*Tektona*'), 151. 1781 sem. 2.
T.: *T. grandis* Linnaeus f.
(≡) *Theka* Adanson, Fam. **2**: 445. 1763 prim.

post 7181. **Xerocarpa** Lam, Verbenac. Malay. Arch. 98. 31 Mar 1919.
T.: *X. avicenniaefoliola* Lam.
(H) *Xerocarpa* (G. Don) Spach, Hist. Nat. Vég. Phan. **9**: 583. Aug 1840 [GOODEN.].

LABIATAE (LAMIACEAE)

†7227. **Stenogyne** Bentham, Bot. Reg. **15**: sub *t. 1292.* 1 Jan 1830.
T.: *S. rugosa* Bentham (*typ. cons.*).

Note: Conservation superfluous: *Stenogyne* Cassini, Dict. Sci. Nat. **50**: 491 (1827), was not accepted by the author, who himself accepted *Cryptogyne* for the genus [COMPOS.].

7299. **Sphacele** Bentham, Bot. Reg. **15**: sub *t. 1289*. 1 Dec 1829.
T.: *S. lindlei* Bentham, nom. illeg. [*Stachys salviae* Lindley, *S. salviae* (Lindley) Briquet] (*typ. cons.*).
(=) *Alguelaguen* Adanson, Fam. **2**: 505. 1763 prim.
(=) *Phytoxis* Molina, Saggio Chili ed. 2. 145. 1810.
T.: *P. sideritifolia* Molina.

†7306. **Saccocalyx** Cosson et Durieu, Ann. Sci. Nat. Bot. ser. 3. **20**: 80. 1853 sem. 2.
T.: *S. satureioides* Cosson et Durieu.

Note: Conservation superfluous: *Saccocalyx* Steven, Bull. Soc. Nat. Moscou **4**: 269 (1832), was not validly published (*nomen nudum*).

7312. **Amaracus** Gleditsch, Syst. Pl. 189. 1764.
T.: *A. tomentosus* Moench, nom. illeg. (Meth. Suppl. 137. 1802) [*Origanum dictamnus* Linnaeus, *A. dictamnus* (Linnaeus) Bentham] (*typ. cons.*).
(H) *Amaracus* Hill, Brit. Herbal 381. 1756 sem. 1 [LABIAT.].
≡ *Majorana* P. Miller 1754 (*nom. cons.*) (7314).
(=) *Hofmannia* Heister ex Fabricius, Enum. ed. 2. 110. 1763.
T.: *Origanum sipyleum* Linnaeus (Sp. Pl. 589. 1753).

†7314. **Majorana** P. Miller, Gard. Dict. Abr. ed. 4. 1754.
T.: *M. hortensis* Moench (Meth. 406. 1794) (*Origanum majorana* Linnaeus) (*typ. cons.*).

Note: Conservation superfluous: there are no earlier competing names.

7317. **Pycnanthemum** A. Michaux, Fl. Bor.-Am. **2**: 7. 19 Mar 1803.
T.: *P. incanum* (Linnaeus) A. Michaux (*Clinopodium incanum* Linnaeus) (*typ. cons.*).
(=) *Furera* Adanson, Fam. **2**: 193, 560. 1763 prim.
T.: *Satureja virginiana* Linnaeus (Sp. Pl. 567. 1753).

Note: (=) *Koellia* Moench, Meth. 407 (1794), ≡ *Furera* Adanson (1763), hence is superfluous on publication and illegitimate.

7342. **Hyptis** N. J. Jacquin, Collectanea **1**: 101, 103. 1787 ('1786').
T.: *H. capitata* N. J. Jacquin (*typ. cons.*).
(=) *Mesosphaerum* P. Browne, Hist. Jamaica 257. 1756.
T.: *M. suaveolens* (Linnaeus) O. Kuntze (*Ballota suaveolens* Linnaeus) (vide O. Kuntze, Rev. Gen. Pl. **2**: 525. 1891).
(=) *Condea* Adanson, Fam. **2**: 504. 1763 prim.
LT.: *Satureja americana* Poiret 1804 (vide O. Kuntze, Rev. Gen. Pl. **2**: 524. 1891).

7346. **Alvesia** Welwitsch, Trans. Linn. Soc. **27**: 55. 1869.
T.: *A. rosmarinifolia* Welwitsch.
(H) *Alvesia* Welwitsch, Apont. 587. Dec 1858 [LEGUM.].
T.: *A. bauhinioides* Welwitsch.

†7350. **Plectranthus** L'Héritier, Stirp. Nov. 84 verso. Mar 1788.
T.: *P. fruticosus* L'Héritier (*typ. cons.*).

Note: Conservation superfluous: (=) *Germanea* Lamarck, Enc. **2**: 690, was published in April 1788 or later. The proposal to choose *P. fruticosus* L'Héritier as the type (see Bullock et Killick, Taxon **6**: 239. 1957) was accepted by the Committee for Spermatophyta (Taxon **7**: 188. 1958) and by the IXth International Botanical Congress. The choice had already been made by Nakai (Bot. Mag. Tokyo **48**: 785. Nov 1934). It has been shown that L'Héritier's other species must be transferred to *Coleus* and that the generic characters are based on *P. fruticosus*. The choice of type stands even without the conservation.

7377. **Nicandra** Adanson, Fam. **2**: 219. 1763 prim.
T.: *N. physalodes* (Linnaeus) J. Gaertner, Fruct. **2**: 237. 1791 ('*physaloides*') (*Atropa physalodes* Linnaeus) (*typ. cons.*).
(≡) *Physalodes* Boehmer in Ludwig, Def. Gen. Pl. 41. 1760.

Note: (≡) *Pentagonia* Heister ex Fabricius, Enum. 184 (1759), was not validly published; the first valid publication was by Fabricius, Enum. ed. 2. 336 (1763 sero).

7382. **Iochroma** Bentham, Bot. Reg. **31**: *t. 20.* 1 Apr 1845.
T.: *I. tubulosa* Bentham, nom. illeg. [*Habrothamnus cyaneus* Lindley, *I. cyaneum* (Lindley) M. L. Green] (*typ. cons.*).
(=) *Diplukion* Rafinesque, Sylva Tell. 53. 1838 trim. 4.
(=) *Valteta* Rafinesque, Sylva Tell. 53. 1838 trim. 4.

7388. **Hebecladus** Miers, Lond. Journ. Bot. **4**: 321. 1845.
T.: *H. umbellatus* (Ruiz et Pavon) Miers (*Atropa umbellata* Ruiz et Pavon) (*typ. cons.*).
(≡) *Kokabus* Rafinesque, Sylva Tell. 55. 1838 trim. 4.
(=) *Ulticona* Rafinesque, Sylva Tell. 55. 1838 trim. 4.
(=) *Kukolis* Rafinesque, Sylva Tell. 55. 1838 trim. 4.
T.: *K. bicolor* Rafinesque.

7392. **Triguera** Cavanilles, Diss. **2** [append.]: I. *t. A.* 1786.
T.: *T. ambrosiaca* Cavanilles (*typ. cons.*).
(H) *Triguera* Cavanilles, Diss. **1**: 41. 1785 [BOMBAC.].
T.: *T. acerifolia* Cavanilles.

7393. **Scopolia** N. J. Jacquin, Obs. Bot. **1**: 32. 1764 (*Scopola*'); corr. Link, Enum. Hort. Berol. **1**: 178. 1821.
T.: *S. carniolica* N. J. Jacquin.
(V) *Scopola* N. J. Jacquin, Obs. Bot. **1**: 32. 1764.
(H) *Scopolia* Adanson, Fam. **2**: 419. 1763 prim. [CRUCIF.].
T.: *Cardamine lunaria* Linnaeus.
≡ *Ricotia* Linnaeus 1763.

7398. **Athenaea** Sendtner in C. F. P. Martius, Fl. Bras. **10**: 133. 1 Jul 1846.
T.: *A. picta* (C. F. P. Martius) Sendtner (*Witheringia picta* C. F. P. Martius) (*typ. cons.*).
(H) *Athenaea* Adanson, Fam. **2**: 121. 1763 prim. [COMPOS.].
≡ *Struchium* P. Browne 1756.
(=) *Deprea* Rafinesque, Sylva Tell. 57. 1838 trim. 4.

Note: Another homonym: *Athenaea* Schreber, Gen. **1**: 259 (1789) [FLACOURT.].

†7400. **Withania** Pauquy, Diss. Bellad. 14. 1825.
T.: *W. frutescens* (Linnaeus) Pauquy (*Atropa frutescens* Linnaeus) (*typ. cons.*).

Note: Conservation superfluous: (=) *Physaloides* Moench, Meth. 473 (1794) (non *Physalodes* Boehmer, 1760), is not available.

7414. **Solandra** Swartz, Vet.-akad. Stockholm Nya. Handl. **8**: 300. 1787.
T.: *S. grandiflora* Swartz.
(H) *Solandra* Linnaeus, Syst. Nat. ed. 10. 1269. Mai-Jun 1759 [UMBELL.].
T.: *S. capensis* Linnaeus.

Note: Another homonym: *Solandra* Murray, Comm. Soc. Reg. Sci. Gott. **6**: 21 (1785) [BOMBAC.].

(to be continued)

NEWS AND NOTES

SIDNEY FAY BLAKE (1892-1959)

Dr. Sidney Fay Blake, 67, senior botanist and taxonomist for the Agricultural Research Service of the U.S. Department of Agriculture, died Thursday, Dec. 31, 1959 after suffering a stroke in his Beltsville, Md., office.

Dr. Blake gained world-wide recognition for his work in the *Compositae*. For this and other accomplishments he was named one of the 50 greatest living botanists in America by the Botanical Society of America in 1956.

Born in Stoughton, Mass., he received his A.B., M.A., and Ph.D. degrees from Harvard University where he was elected to Phi Beta Kappa. Before coming to USDA in 1917, he was assistant botanist at the Gray Herbarium, Cambridge, Mass.

During his career with USDA, Dr. Blake travelled extensively throughout Europe making studies of botanical collections in herbariums at London, Paris, Geneva and other points. He returned to the Gray Herbarium several times for additional study and research. During the summer of 1927, he taught botany at Stanford University graduate school.

Author of more than 300 botanical publications, he was working on the second volume of his "Floras of the World" when stricken.

Obituaries will be published in Rhodora and in this journal.

QUESTIONS OF BOTANICAL TERMINOLOGY

The intention of this short account is to draw the attention of botanists to practical problems confronting workers in descriptive systematic botany, which have hitherto been overlooked, and which require discussion.

Experience shows, that for the ordinary research worker in botany it is often difficult to ascertain the real meaning of some botanical terms. This results from the fact that existing botanical glossaries disagree in the translation of these. For instance, there is great confusion among botanists regarding the definition of the terms relating to the concept of "type", such as "*allotypus*", "*mimotypus*", etc. Moreover, from the majority of glossaries, and also from other appropriate reference books, these terms are missing, though they are very important for the description of plants.

Another question with regard to botanical vocabulary that cannot be easily decided is that of the synonyms and words having several variations of spelling. Indeed, the word "*achenium*" can be spelled also as "*achaenium*", "*akena*", "*achena*" and "*akenium*". It is desirable that only one of these forms, the most correct, should be adopted for use, but there is nowhere given any criterion to decide which is correct. The same thing is the case with the synonyms. Of such terms as "*dorsalis*" and "*dorsualis*", "*squamiger*" and "*squamifer*", etc., only one, as preferable, should be employed, but no suggestions on that score can be found in botanical glossaries.

It should also be noted that among botanical terms there are expressions either indefinite in meaning, as for instance, "*ovalis*", or actually incorrect, such as the word "*oblanceolatus*", which is merely the result of misconception, for its antonym, "*lanceolatus*", originally meant narrow elliptic and *symmetrically tapering at both ends*. Nevertheless, both of these defective terms are widely used in botanical literature, and have even penetrated into text-books and manuals.

It is regrettable that some authors of botanical works are themselves creating confusion in botanical terminology either by using incorrect terms, such as those mentioned above, or by inexact use of correct ones, so that even the commonest and simplest of them, for example "*zygomorphus*" or "*didynamus*", are not always employed correctly. For the same reason even in large and sound botanical works one can come across errors in, principally, morphological terminology.

All of this shows that there is something wrong with regard to the subject discussed here, and that steps should be taken to eliminate these irregularities.

For example, it may be advisable to arrange for a revision of the botanical vocabulary, dividing all the terms into those to be adopted for use and those to be rejected (archaic, obscure, or incorrect). As regards the valid terms, the meanings of those of them that are debatable should be clarified and standardized, and, for all of them, botanists should be called on to use them accurately, i.e. in accordance with their real sense. The lists of rejected terms, on the other hand, should be provided with appropriate recommendations, prompting botanists to renunciate employing them.

Should this project be realized, it would be necessary, as a result of the work performed, to publish an International Standard Botanical Dictionary or Manual — a reference book, containing exhaustive information on all the questions of botanical terminology, and provided, if necessary, with illustrations (morphological terms). This publication should therefore be so complete and authoritative as to serve as an *ultima ratio* for botanists in case of any difficulties of a terminological nature.

As a special section in this book there should be inserted a glossary of the specific names of plants, the correct employment of which also presents some difficulties. In this connection it should be taken into consideration that botanists have especial trouble with the translation of specific names of Greek origin.

When published, the Dictionary may prove to be an indispensable reference book for students, teachers and beginners in botanical work as well as for experienced botanists. In order to make it more popular it should be sold at a moderate price.

Of course, personal opinion in matters of this kind is not authoritative and, if the point of view expressed here is to prevail it will be most suitable for some international organisation, for instance the International Botanical Congress, to elaborate and publish this Dictionary in the same way as has been done with the Code of Botanical Nomenclature.

A. Baranov
C.P. 7216, São Paulo, Brazil

COMMITTEE ON BIOSYSTEMATIC TERMINOLOGY

Resolution passed at the Montréal Congress, August 1960

The joint session of sections 2 and 9 of the IXth International Botanical Congress held in Montreal on August 20th — 21st, 1959, wishes to express its concern with the lack of coordination of terminology in the field commonly known as biosystematics. Accordingly, it is moved that a committee be appointed by the International Union of Biological Sciences to consider terminology in this field and to make recommendations concerning the use of all such terms. It would *not* be within the terms of reference of this committee to propose modifications of the International Code of Botanical Nomenclature.

Proposed by David H. Valentine
Seconded by Áskell Löve

The I.A.P.T. is the Section for Plant-Taxonomy of the International Union of Biological Sciences. The Council has decided to appoint the following Committee, with power to co-opt:

Tyge W. Böchter, Copenhagen
Claude Favarger, Neuchâtel
M. Guinochet, Paris (co-opted)
Hiroshi Hara, Tokyo
Vernon H. Heywood, Liverpool
Harlan Lewis, Los Angeles
Áskell Löve, Montreal (to act as chairman)
Hermann Merxmüller, München
A. Nygren, Uppsala (co-opted)
Karl Heinz Rechinger, Wien
W. Gajewski, Warszawa.

COMMITTEE FOR ALGAE

The results of voting on proposals for the conservation of generic names of algae by the Committee for Algae are as follows:

	Yes	No
(25) *Stilophora* J. Ag. 1841 vs. *Stilophora* C. Ag. 1827	9	1
(26) *Spermatochnus* Kuetz. 1843 vs. *Spermatochnus* Kuetz. 1843 [change of type]	8	1
(27) *Microcystis* Lemm. 1907 vs. *Microcystis* Kuetz. 1833 *Diplocystis* Trev. 1848	9	2
(s.n.) *Catenella* Grev. 1830 vs. *Clavatula* Stackh. 1809	9	1
(37) *Botryocladia* (J. Ag.) Kylin 1931 vs. *Myriophylla* Holmes 1894	7	2
(51) *Chlorococcum* Menegh. 1842 vs. *Chlorococcum* E. M. Fries 1825	9	1
(52) *Haematococcus* Flotow 1844 vs. *Haematococcus* C. Ag. 1828 *Disceraea* A. et C. Morren 1841	8	2

P. C. Silva

NOMINA CONSERVANDA PROPOSITA

(71) Proposal for the conservation of the generic name **Geophila** D. Don (Rubiaceae) Fl. Nep. 136 (1825) versus *Geophila* Bergeret (Liliaceae) Fl. Basses-Pyrén. 2: 184 (1803), 2nd ed., 306 (1909), and rejection of the substitute names *Carinta* W. F. Wight in Contrib. U.S. Nat. Herb. 9: 216 (1905) and *Geocardia* Standley in Contrib. U.S. Nat. Herb. 17: 444 (1914).

Geophila D. Don (Rubiaceae), *nom. cons. prop.*

Adopted by: Wight, Ic. Pl. Ind. Or. t. 54 (1838); Walp., Rep. 2: 469, 941 (1843); Benth. in Hook., Fl. Nigrit. 422 (1849); Miq., Fl. Ind. Bat. 2: 311 (1857); Grisebach, Fl. Brit. W. Ind. Isl. 347 (1861); Benth. et Hook. f., Gen. Pl. 2: 127 (1873); Hiern, in Fl. Trop. Afr. 3: 220 (1877); Hook. f., in Fl. Brit. Ind. 3: 177 (1880); Hemsley, Biologia Centr.-Am. Bot., 2: 53 (1881); Mueller Arg., in Martius, Fl. Bras. 6, 5: 424 (1881) (as section of *Mapouria* Aublet); Trimen, Fl. Ceylon 2: 363 (1894); Cooke, Fl. Bombay 1: 619 (1903); Durand, Syll. Fl. Congol. 283 (1909); De Wild., Comp. Kasai 426 (1910); Étud. Fl. Bas.- et Moyen Congo 3: 302 (1910); Bull. Jard. Bot. Brux. 4: 215 (1914); Pl. Beq. 2: 299 (1923); Ridley, Fl. Mal. Pen. 2: 146 (1923); Pitard in Lecomte, Fl. Gén. Indo-Ch. 366 (1924); Britton & Wilson, Sci. Surv. P. Rico & Virgin Is. 6: 251 (1925); Hutch. et Dalz., Fl. W. Trop. Afr. 2: 128 (1931); Bremek. in Pulle, Fl. Surin. 4: 233 (1934); Moore in Fawc. & Rendle, Fl. Jam. 7: 110 (1936); Robyns in Fl. Sperm. Parc Nat. Albert 2: 368 (1947); Johnston in Sargentia 8: 281 (1949); Andrews, Fl. Sudan 2: 439 (1952); Brenan in Mem. N.Y. Bot. Gard. 8: 453 (1954); Alain in Contrib. Ocas. Mus. Hist. Nat. Col. "de la Salle", Habana, No. 17, 3 (1959).

Type species: *Geophila repens* (L.) I. M. Johnston (*Rondeletia repens* L.)

Geophila Bergeret (Liliaceae), *nom. rej. prop.*

Type species: *Geophila pyrenaica* Bergeret.

This name, which was proposed in 1803 for a liliaceous genus, is a synonym of *Merendera* Ram. (1798), and has never been used apart from its original publication by Bergeret.

Carinta W. F. Wight (Rubiaceae) in Contrib. U.S. Nat. Herb. 9: 216 (1905).

Adopted by: G. Taylor in Exell, Cat. Vasc. Pl. S. Tomé 25 (1956); Smith & Downs in Sellowia 7: 65, 88 (1956); Garcia in Mem. Junta Invest. Ultram. 6: 44 (1959).

Type species: *Carinta repens* (L.) Smith & Downs.

Geocardia Standley (Rubiaceae) in Contrib. U.S. Nat. Herb. 17: 444 (1914).

Adopted by: Bremekamp in Bull. Jard. Bot. Brux. 22: 103 (1952). Bakh. f. in Backer, Beknopte Fl. Java 15: 143 (1956).

Discussion: D. Don described the genus *Geophila* in 1825 and since that date the name has been widely used for a rubiaceous genus of creeping herbs. In 1881 Mueller d'Argovie realized that Don's name was a later homonym of *Geophila* Bergeret (1803) in Liliaceae and transferred the species to *Mapouria*. F. W. Wight coined the new name *Carinta* in 1905 with *C. herbacea* (Jacq.) W. F. Wight as the only binomial, but it was not until 1956 that further combinations were made under *Carinta* and at the time of writing only 5 are known to have been made. In the meantime Standley in 1914 proposed *Geocardia* to replace *Geophila* D. Don, not realizing that a legitimate name had already been validly published by Wight. *Geocardia* must be rejected as a superfluous name.

There would seem to be an excellent case for the conservation of *Geophila* D. Don for the simple reason that *Geophila* Bergeret is a synonym of another liliaceous genus and has never been used except by its author in 1803. On the other hand some 50 new combinations would be necessary to transfer the species of rubiaceous plants hitherto referred to *Geophila* to the next available name, *Carinta*.

In 1925 Britton and Wilson mentioned that *Geophila herbacea* (Jacq.) K. Schum. (for discussion on the authorities for this name see Brenan in Mem. N.Y. Bot. Gard. 8: 453 (1954)), was the type species, for although Don referred two more (New World) species to the genus, this was the only one described by him, under the binomial *Geophila reniformis*. This was, however, a superfluous name since he cited *Psychotria herbacea* Jacq. (1760) as a synonym. The latter, and *Geophila herbacea*, are also illegitimate as they are nomenclatural synonyms of *Rondoletia repens* L. (1759). The transfer of this epithet to *Geophila* was made by I. M. Johnston in 1949.

Proposed by: F. N. Hepper (Kew).

NATIONAL SCIENCE FOUNDATION

In connection with its programs for the support of basic research, the National Science Foundation of the United States for some years has followed the policy of permitting institutions to apply for and receive, as an indirect cost allowance, up to 15% of the total direct costs involved in approved grant proposals.

Because of rising costs of administration and the adverse effect of such increases upon the ability of institutions to carry on research work, the Foundation has made a revision in its indirect cost policy.

Pending completion of a study of the entire problem of indirect costs, the Foundation herewith announces that, effective January 1, 1960, it will permit institutions to request up to 20% of total direct costs as the allowance for indirect costs in research proposals. In no event, however, may such indirect costs exceed the last "audited" or "negotiated" rate approved for the institution by a Federal agency for purposes of Government-sponsored research and development.

Thus, an institution with an "audited" or "negotiated" indirect cost rate so approved may claim such rate provided it does not exceed 20% of the total direct costs.

This announcement will be reflected in the forthcoming revision to the 1955 edition of the National Science Foundation brochure on "Grants for Scientific Research".

TYPE COLLECTIONS OF ALGAE
Additions and Corrections

Bonnemaison, Th. — Quimper, France, Municipal Library, apply to: service central des prêts, Bibliothèque nationale, 58, rue de Richelieu, Paris 2.

Contarini — Venice, Italy, Museo Civico di Storia Naturale.

Drouet, Fr. — Tucson, U.S.A., Dept. of Bot., Univ. of Arizona (ARIZ), private collection.

Olivi, G. — Venice, Italy, Museo Civico di Storia Naturale.

Zanardini, G. A. M. (1804-1878) — Venice, Italy, Museo Civico di Storia Naturale; also a few in herb. Kützing.

Joséphine Th. Koster (Leiden)

FLORA OF BISMARCK ARCHIPELAGO

Peekel, G.: Illustrierte Flora des Bismarck-Archipels für Naturfreunde. MS. 8° vol. 1-12, 13 (Nachtrag 1), 14 (Nachtrag 2), c. 1300 pag. German text + c. 940 drawings in Indian ink 17 × 11 cm. — Microphotocopy (Positive) on 9 × 12 cm film-cards available through the Rijksherbarium, Leyden (Netherlands); price c. D.fl. 40.—.

Father Gerhard Peekel M.S.C. lived in the Bismarck Archipelago from 1904, with several short interruptions, to his death in Rabaul in 1949. Besides his missionary work and extensive comparative studies of about 40 South Pacific languages he achieved to describe and draw the flora he observed in New Ireland and the Gazelle Peninsula, in total c. 1200 species in c. 670 genera and 120 families. The scientific names are based on the dried specimens he collected for the Berlin Botanical Museum, and from 1939 on for the Bogor Garden. Both the private herbarium of Father Peekel and almost all his specimens deposited at Berlin, which include the type material of nearly 100 new spp. he discovered in New Ireland, were lost during the war. This makes the detailed descriptions and drawings, made from fresh material, particularly valuable, the more, as generally the type localities are indicated with great accuracy, which will help to recollect topotype material in the future. The descriptions are completed by ecological observations and many native names; special lists of the spp. used for food, poisoning, medical treatment, dyeing, decorating, for textiles and housebuilding, and a calendar of the flowering times for many spp. are added.

The manuscript contains the descriptions and drawings of several species, to which Peekel, cut off as he was during the war from all contact with scientific institutions, has given a provisional name by adding a native name to the generic name. These names, as the whole work, are not effectively published under the Code (§ 29) by the above mentioned microfilm copy. H. Sleumer

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Nevada

Contributions toward a flora of Nevada 47. G. Edwin: *Scrophulariaceae* of Nevada; pt. II. The genera except *Mimulus* and *Penstemon*. Beltsville, Md., 1959. (47 pp., 1 plate).

Flora of Angola

Subsídios para o estudo da biologia na Lunda. A. Cavaco: Contribution à l'étude de la Flore de la Lunda d'après les récoltes de Gossweiler (1946-1948). Public. Cult., Comp. Diam. Angola; Lisboa, 1959. (230 pp., 2 maps, 11 vegetation photographs, 11 plates; with general account of the vegetation, keys to families, genera, and species, and descriptions; deals with all vascular plants).

Pteridophyta of West Tropical Africa

A. H. G. Alston†: The Ferns and Fern-Allies of West Tropical Africa. Publ. as a supplement to the 2nd ed. of the Flora of West Tropical Africa, Crown Agents, London, 1959. (89 pp., 14 figs.; paragraph on cytology by I. Manton. Price 7 s. 6 d.).

Excursion Flora of the British Isles

A. R. Clapham, T. G. Tutin & E. F. Warburg: Excursion Flora of the British Isles. Cambridge Univ. Press, 1959. (xxxiii + 579 pp.; with keys and concise descriptions; price 22 s. 6 d.).

Keys to Russian Freshwater Algae

Opredjelitjel' presnovodnych vodoroslej S.S.S.R. (Key to the freshwater Algae of the U.S.S.R.) Vol. 8: *Chlorophyta, Volvocineae,* by N. T. Djedusenko-Ščegoljeva, A. M. Matvijenko & L. A. Škorbatov. Ed. by the Akademija Nauk S.S.S.R., Moscou/Leningrad, 1959. (230 pp., 107 figs.; with general introduction keys, descriptions, and data on distribution; in Russian. Price ?).

Illustrations of Vascular Plants of Germany

W. Rothmaler: Exkursionsflora von Deutschland. Atlas der Gefässpflanzen, by E. Panzig. Ed. Volk und Wissen, Berlin, 1959. (567 pp., of which 548 of illustrations showing a large number of vascular plants growing wild in Germany, with indications of colour; price ca. DM. 10.—).

Dictionary of Economic Plants

J. C. Th. Uphof: Dictionary of economic plants. Publ. by H. R. Engelmann, Weinheim (Bergstrasse), Germany, 1959. (400 pp.; all cryptogamic and phanerogamic plants of economic plants listed alphabetically, with indication of distribution and use; includes common names of plants and products, lists of economically important genera under families, etc. Price ca. DM. 40.—).

Index to Brazilian Phanerogams

J. Angely: Index Angely. Pt. I: Lista dos typus do Brasil. Curitiba, Paraná, 1959. (16 pp.; lists names of species described from Brazil, from *Abatia* to *Annona*).

* * *

New Periodicals

Persoonia. A mycological journal. Publ. by the Rijksherbarium, Leiden, in co-operation with the Nederlandse Mycologische Vereniging. Contains articles and book reviews. Ed. by H. J. Lam, M. A. Donk & R. A. Maas Geesteranus. Annual subscription Hfl. 25.— for institutes and societies, Hfl. 20.— for individuals. Vol. I pt. 1 was published in 1959.

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Dr. THOMAS ARCHIBALD SPRAGUE, 1877-1958

A. A. Bullock (Kew)

Thomas Archibald Sprague was born in Edinburgh on 7 October 1877, and was one of the eleven children born to Thomas Bond Sprague, M.A., LL.D, actuary, and his wife Margaret Vaughan (née Steains). His precision of thought he evidently inherited through the mathematical mind of his father, and through his mother, who was a talented pianist, artist and woodcarver with a great love for botany, his interests in music, ceramics and botany which held his love and attention throughout his long life.

Sprague attended the Collegiate School, Edinburgh and went on to Edinburgh University, where he graduated (B.Sc.) with distinction in botany. For his subsequent researches the same University awarded the D.Sc. degree in 1927.

In addition to his profession as an actuary, Sprague's father was a competent geologist and microscopist and shared his wife's love of plants; it is not surprising that he early showed his own interest, which was strongly influenced and encouraged by his eldest sister. Many years later he published in partnership with her „The Herbal of Valerius Cordus" and presented her with a beautifully bound copy bearing the dedication: "M. S. Sprague praeceptrici olim hodie collaboratrici d.d. T. A. Sprague". He often said that his eldest sister was the best botanist in the family, but had chosen a different profession. As a boy, youth and young man Sprague found the usual outdoor games and field sports unsatisfying and fatiguing; he had, however, a good singing voice and, in the days before the gramophone and radio, was much sought after for musical parties in Edinburgh.

After graduating in 1898, Sprague joined the expedition of Capt. H. W. Dowding, R. N., to Venezuela and Colombia, where he collected plants under conditions of great difficulty and hardship. The first set is deposited at Kew. On his return Sprague was appointed in 1900* to the staff of the Royal Botanic Gardens, Kew, and for twenty years was in general charge of the groups *Thalamiflorae* and *Disciflorae* of Bentham and Hooker. It was during these two decades that he elaborated the *Loranthaceae* — his greatest taxonomic work — and the *Bignoniaceae* for the *Flora of Tropical Africa* and the *Flora Capensis*. Later, when the work of the Herbarium was reorganized on a geographical basis, Sprague was placed in charge of the American collections, but by this time his interest in ancient herbals and nomenclature had become paramount, and he gave less and less time to work of a monographic nature.

In 1913, accompanied by John Hutchinson, he visited the Canary Islands, and during the 1914-18 War he served, in a very lowly capacity, with a unit of the Artillery

* It is of interest to note that at this date Sir Joseph D. Hooker was still a regular visitor to the Herbarium.

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stationed in the Punjab. He was elected to Fellowship of the Linnean Society of London in 1903 and in 1937 he received the Coronation Medal of King George VI and became Deputy Keeper of the Kew Herbarium.

By this time Sprague had become the world's foremost authority on the theory and practice of plant nomenclature. With the cooperation of Hitchcock in America — a cooperation which began in early the 1920's and was consolidated and strengthened when Sprague attended the Ithaca congress in 1926 — he had successfully steered the

Dr. T. A. Sprague, April 1939
(photo G. Atkinson)

International Rules through the Cambridge (1930) Congress, and for the first time we had an internationally agreed code of rules. Sprague was equally prominent at the Congresses of Amsterdam (1935) and Stockholm (1950); at the latter he shared the presidency of the Nomenclature Section with E. D. Merrill. At Paris 1954 the Section sadly missed his penetrating and sometimes caustic comments, whilst at Montreal he was remembered by a message to his widow — herself, as M. L. Green, no mean worker in the field of nomenclature.

Sprague's meticulous attention to detail and his insistence on accuracy in both speech and the written word is reflected in the arduous training he gave, not only to the compilers of the *Index Kewensis*, but to all the young botanists who joined the Kew staff during his long service. Most of the present senior staff remember him with gratitude as both friend and teacher. He was always quick to help; his anger in the face of incompetence or stupidity was vitriolic in its intensity but short-lived. Always inclined to pedantry, he abhorred solecism and never failed to remind an offender in such a way that repetition was almost impossible.

Sprague was a kindly man, but he did not suffer fools gladly. Had he been less forthright in speech, and less devastating with his pen, — and perhaps with a greater personal ambition — he might have attained a much higher worldly position and have received more public honours. But he would not have had a larger place in the memory of his colleagues at Kew, or in the esteem of botanists all over the world.

Sprague's last botanical papers were published posthumously; to the end of his life he had retained his alert analytical mind. He died suddenly and unexpectedly on 22 Oct. 1958, when there was every reason to think that he was recovering from a bronchial condition which had grievously weakened his frail body.

In the following list of his publications, Sprague's several contributions in the field of ceramics is omitted. His chief interest was in 18th century English wares, and he was an expert on „Newhall" and the various pirate kilns using the same or similar designs and methods.

BOTANICAL PUBLICATIONS OF THE LATE DR. T. A. SPRAGUE

1903

On the *Heteranthus* section of *Cuphea* (*Lythraceae*). Ann. Bot. Oxford 17: 159-166.

1904

Bignoniaceae [of South Africa]. This.-Dyer, Fl. Cap. 4(2): 447-454.
Tecoma shirensis Bot. Mag. *t. 7970.*
The cultivated species of *Mannettia.* Gard. Chron. London, ser. 3. 36: 384-385.

1905

Manettiarum pugillus. Bull. Herb. Boissier sér. 2. 5: 264-267.
A new *Poupartia* from Madagascar. Bull. Herb. Boissier sér. 2. 5: 408.
Manettiarum pugillus alter. Bull. Herb. Boissier sér. 2. 5: 832-836.
Plantarum novarum vel minus cognitarum diagnoses. Bull. Herb. Boissier sér. 2. 5: 700-704, 1164-1170.
Preliminary report on the botany of Captain Dowding's expedition, 1898-99. Trans. Bot. Soc. Edinburgh 22: 425-436.

1906

Bignoniaceae americanae novae. Bull. Herb. Boissier sér. 2. 6: 371-376.
Hedysarum multijugum var. *apiculatum.* Bot. Mag. *t. 8091.*
A revision of *Acridocarpus.* Journ. Bot. London 44: 192-207.
Bignoniaceae [of Tropical Africa]. This.-Dyer, Fl. Trop. Afr. 4(2): 512-538.

1907

Tricuspidaria dependens. Bot. Mag. *t. 8115.*
Caesalpinia vernalis. Bot. Mag. *t. 8132.*
The synonymy and distribution of the species of *Tricuspidaria*. Kew Bull. 1907: 10-16.
A revision of *Dubouzetia*. Kew Bull. 1907: 125-128.
The genus *Sageretia* in Africa. Kew Bull. 1907: 373-374.
Sterculia rhinopetala. Kew Bull. 1907: 408-409.

1908

Bignoniaceae. (in Ule, E. III Beitrage zur Flora der Hylaea. Supplement) Verh. Bot. Ver. Berlin 50: 119-123.
Chirita barbata. Bot. Mag. *t. 8200.*
Caesalpinia japonica. Bot. Mag. *t. 8207.*
Bignoniaceae peruvianae (1. Urban: Plantae novae andinae imprimis Weberbauerianae. IV.) Engler, Bot. Jahrb. 42: 175-177.
Columnea magnifica. Gard. Chron. London, ser. 3. 43: 66-67.
An overlooked *Malvastrum* [*M. hypomadarum*, n.sp.] Gard. Chron. London, ser. 3. 43: 394-395.
(..... and Hutchinson, J.) Note on *Barbarea stricta* Andrz. Journ. Bot. London 46: 106-109.
The prickly-fruited species of *Euonymus*. Kew Bull. 1908: 27-36.
Sterculia alexandri. Kew Bull. 1908: 137-139.
New rubber-containing plants. Kew Bull. 1908: 199-200.
Triumfetta cordifolia. Kew Bull. 1908: 230-233.
Pilocarpus racemosus. Kew Bull. 1908: 310.

1909

Saxifraga scardica. Bot. Mag. *t. 8243.*
Cissus adenopodus. Bot. Mag. *t. 8278.*
Magnolia delavayi. Bot. Mag. *t. 8282.*
Parthenocissus tricuspidata. Bot. Mag. *t. 8287.*
Hernandiaceae. This.-Dyer, Fl. Trop. Afr. 6(1): 189-192.
The Cleomes. Gard. Chron. London, ser. 3. 45: 114.
Malpighiaceae. Journ. de Bot. Paris 22: 24-25.
(..... and Hutchinson, J.) The Triumfettas of Africa. Journ. Linn. Soc. London, Bot. 39: 231-276.
The section *Omphocarpus* of *Grewia* in Africa. Kew Bull. 1909: 18-22.
The section of *Microcos* of *Grewia* in Africa. Kew Bull. 1909: 66-68.
Pilocarpus racemosus. Kew Bull. 1909: 76.
Erythrina ovalifolia. Kew Bull. 1909: 198-199.
Caraipa africana. Kew Bull. 1909: 226.
(..... and Boodle, L. A.) Kokoti (*Anopyxis calaënsis* Sprague). Kew Bull. 1909: 309-312.
Heritiera utilis. Kew Bull. 1909: 348.
Bussea xylocarpa. Kew Bull. 1909: 351.
The american species of *Microtropis*. Kew Bull. 1909: 362-364.

1910

Tristellateia australis. Bot. Mag. *t. 8334.*
Loranthaceae. This.-Dyer, Fl. Trop. Afr. 6(1): 255-411.
Cupú-açú (*Theobroma grandiflorum* K. Schum.). Kew Bull. 1910: 164-166.
Entandrophragma, Leioptyx and *Pseudocedrela*. Kew Bull. 1910: 177-182.

1911

Aquilegia flabellata var. *nivea*. Bot. Mag. *t. 8354.*
Clematis montana var. *wilsonii*. Bot. Mag. *t. 8365.*
Clematis aristata var. *dennisae*. Bot. Mag. *t. 8367.*
Viliaresia mucronata. Bot. Mag. *t. 8376.*
Columnea gloriosa. Bot. Mag. *t. 8378.*
Clusia grandiflora. Bot. Mag. *t. 8387.*

Clematis chrysocoma. Bot. Mag. *t. 8395*.
Symbegonia fulvo-villosa. Bot. Mag. *t. 8409*.
Loranthaceae. This.-Dyer, Fl. Trop. Afr. 6(1): 255-411.
Oncoba routledgei. Gard. Chron. London, ser. 3. 49: 322-323.
Arrabidaea crassa. Hooker, Ic. Pl. 30: *t. 2933*.
Gooringia littledalei. Hooker, Ic. Pl. 30: *t. 2944*.
Saxifraga lingulata and *S. lantoscana*. Kew Bull. 1911: 129-133.
Maerua angustifolia. Kew Bull. 1911: 245-246.
Maerua gilgii. Kew Bull. 1911: 322-323.

1912

Begonia dichroa. Bot. Mag. *t. 8412*.
Dombeya calantha. Bot. Mag. *t. 8424*.
Saxifraga lingulata Bot. Mag. *t. 8434*.
Brachychiton acerifolius. Bot. Mag. *t. 8437*.
Columnea glabra. Bot. Mag. *t. 8453*.
Berberis verruculosa. Bot. Mag. *t. 8454*.
(..... and Hutchinson, J.) Notes on the vegetation of the (Leatherhead) Downs. Gard. Chron. London, ser. 3. 52: 404-405.
The genus *Nautilocalyx*. Kew. Bull. 1912: 85-90.
Protium australasicum. Kew Bull. 1912: 370-371.

1913

Magnolia salicifolia. Bot. Mag. *t. 8483*.
Cocculus trilobus. Bot. Mag. *t. 8489*.
Cistus × *loreti*. Bot. Mag. *t. 8490*.
Hypericum kalmianum. Bot. Mag. *t. 8491*.
Hypericum aureum. Bot. Mag. *t. 8498*.
Nautilocalyx pallidus. Bot. Mag. *t. 8519*.
Coriaria terminalis. Bot. Mag. *t. 8525*.
Yew-woods and beech-woods on the chalk. Gard. Chron. London, ser. 3. 53: 364.
Asterophorum eburneum Hooker, Ic. Pl. 30: *t. 2976*.
Hibiscus watsoni. Hooker, Ic. Pl. 30: *t. 2990*.
(..... and Chipp, T. F.) *Entandrophragma* [Key to species]. Kew Bull. 1913: 63-64.
Manduro: a new oil-yielding tree from Portuguese E. Africa (*Balanites maughamii* Sprague). Kew Bull. 1913: 131-141.
Salacia livingstonii. Kew Bull. 1913: 160.
(..... and Hutchinson, J.) A botanical expedition to the Canary Islands. Kew Bull. 1913: 287-299.
Hibiscus asper. Kew Bull. 1913: 418-419.

1914

Ampelopsis megalophylla. Bot. Mag. *t. 8537*.
Actinidia chinensis. Bot. Mag. *t. 8538*.
Viola gracilis. Bot. Mag. *t. 8541*.
Hibiscus waimeae. Bot. Mag. *t. 8547*.
Berberis prattii. Bot. Mag. *t. 8549*.
Pithecoctenium cynanchoides. Bot. Mag. *t. 8556*.
Hypericum ascyron. Bot. Mag. *t. 8557*.
Vitis thunbergii. Bot. Mag. *t. 8558*.
Clematis armandi. Bot. Mag. *t. 8587*.
Hibiscus arnottianus. Kew Bull. 1914: 45-47.
S. American plants (Enumeration of T. A. Sprague's) by H. F. Wernham, Kew Bull. 1914: 63-69.
(..... and Hutchinson, J.) Echiums from the Atlantic Islands. Kew Bull. 1914: 116-122, 265-267.
(..... and Drummond, J. R.) Asiatic species of *Sageretia*, by C. K. Sneider. Kew Bull. 1914: 175.
Notes on Cottons. Kew Bull. 1914: 198-199.

(..... and Boodle, L. A.) West Indian boxwood (*Casearia praecox* Griseb.) Kew Bull. 1914: 214-219.
Derris involuta and D. *oligosperma*. Kew Bull. 1914: 230.
Mahonia fortunei and *M. confusa*. Kew Bull. 1914: 232.
Loranthus oleaefolius. Kew Bull. 1914: 359-367.

1915

Clematis uncinata forma *retusa*. Bot. Mag. *t. 8633*.
Euonymus oxyphyllus. Bot. Mag. *t. 8639*.
The S. African sections of *Loranthus*. Kew Bull. 1915: 67-71.
The genus *Honckenya*. Kew Bull. 1915: 122-123.
Lepidium oxytrichum. Kew Bull. 1915: 123.
Melochia ulmifolia. Kew Bull. 1915: 123-124.
Triumfetta japonica. Kew Bull. 1915: 310-311.
Ceanothus rigidus. Kew Bull. 1915: 379-381.

1916

Clematis pavoliniana. Bot. Mag. *t. 8655*.
Euonymus bungeanus. Bot. Mag. *t. 8656*.
Clematis meyeniana. Kew Bull. 1916: 44-47.
Tarrietia utilis. Kew Bull. 1916: 85-86.
Dioncophyllum. Kew Bull. 1916: 89-92.
The fruit of *Soyauxia*. Kew Bull. 1916: 143-144.
(..... and Hutchinson, J.) African *Annonaceae*. Kew Bull. 1916: 145-161.

1917

Berberis aggregata. Bot. Mag. *t. 8722*.

1919

Dolichandrone and *Markhamia*. Kew Bull. 1919: 302-314.

1920

Podophyllum emodi var. *chinense*. Bot. Mag. *t. 8850*.
Bluff et Fingerhuth, *Compendium Florae Germaniae*, ed. 2. Kew Bull. 1920: 72-74.
Dr. George V. Perez. Kew Bull. 1920: 175-176.
Phellodendron. Kew Bull. 1920: 231-235.
Stellaria or *Alsine*. Kew Bull. 1920: 308-318.

1921

(..... and Britten, J.) The botany of the "Herald". Journ. Bot. London, 59: 22-24.
Plant nomenclature: some suggestions. Journ. Bot. London 59: 153-160.
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NOMENCLATURE OF CONVENTIONAL SYSTEMS

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It is generally admitted that the "International Code of Botanical Nomenclature" (1956) is nothing but an outcome of the system of nomenclature introduced by Linnaeus in 1753, although that system was repeatedly revised and augmented. However, this situation does not exclude the fact that the Code also has assimilated elements from non-Linnaean systems, that is, recognizes as *admissible*, certain names published in works not using Linnaeus's binomial method.

Almost everywhere in the Code one attitude is maintained: all kinds of names are silently treated as non-existing when they do not conform to the system adopted in the Code, except when by a high degree of resemblance confusion with admissible names is feared. The difficulty lies in finding out precisely which kinds of names of non-Linnean systems are deemed admissible by the Code. Admissible are for instance, (i) generic names of the Tournefortian system of nomenclature when they have been published after 1753, and, apparently, (ii) the names proposed by Adanson, who rejected Linnaeus's method.

Moreover, the Code also sanctions certain conventional systems of nomenclature.

Article 2 states that, "Every plant is treated as belonging to a number of taxa of consecutively subordinate ranks, among which the rank of species (*species*) is basic." We start using the Code when we have overcome the difficulties of establishing when we are dealing with an '(individual) plant', or a 'species', or a 'genus', and so on. Consequently, if we then deliberately treat portions of an individual plant as if they were, or represent, complete individual plants and apply to them the same nomenclature, we are promoting a convential system of nomenclature, with pseudo-specific and pseudo-generic names. If two or more portions of an individual plant are given 'specific' names of their own, the complete plant will have two or more conventional names in addition to its rightful true specific name.

Keeping in mind that the ultimate type of a name is a specimen, one will readily notice that in the case of the Fungi imperfecti there is something 'wrong' with the type specimen, for it is not taken to represent a complete plant but only a particular portion of one. The conventional element here is that it is agreed that such portions may receive names as if they were normal types representing complete individual plants.

Except the conventional system of nomenclature for (a) Fungi imperfecti, the Code tolerates still other conventional systems: for (b) incomplete fossil remains (the form- and organ-genera of fossil plants), for (c) lichens (a combination of two widely different plants, a fungus and an alga), and for (d) hybrids. In the latter case the type represents a complete individual plant, neither a particular portion of a plant, nor a combination of two (or more) plant species: the known or putative hybrid origin appears to be something so particular that hybrids are thought by many botanists to be in need of a special set of rules (Appendix I of the Code) for their nomenclature.

The average taxonomist believes in species and genera (and also groups of higher and lower rank) and one of his principal aims is to learn more about the exact limits of the taxa he is concerned with: he is trying to delimit natural taxa (this term being given for what it is worth). When he is pressed to classify and name objects that are not, or do not represent, typical individual plants he sets up conventional units and treats the latter nomenclaturally as if they are natural.

As long as our 'natural classification' is not yet quite perfect—it will never reach that stage—, it will be artificial to a certain degree, but basically it is not 'conventional'

* Rijksherbarium, Leiden.

as in this connection that term is here understood, nor is it basically artificial. A 'conventional classification', like that of the Fungi imperfecti or of lichens, may develop more and more into a natural one, but fundamentally it can not become completely 'natural' since its units of classification are 'conventional'. Conventional systems start with an aberrant 'type' and 'species' concept.

The Code provides indications how to act if one wants to liquidate conventional taxa and to incorporate them into the natural system of classification.

A GLOSSARY OF SOME TERMS RELATING TO THE FERN LEAF

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The descriptive literature on ferns frequently contains examples of the use of different terms for the same structure or character and use of the same term in different ways. Much of this seeming inconsistency is not incorrect usage but simply reflects the preferences of different authors for one or another of synonymous terms or their preference for expressing a character in a particular manner. In some cases, however, it does seem to be a matter of incorrect or imprecise usage. The purpose of this glossary is to bring together in one place the more important terms relating to the fern leaf, to distinguish between terms of general and those of specific application and to present the commonly accepted synonyms. This presentation may be helpful to a worker in achieving consistency and precision in the use of the terms of his choice.

Some terms are general ones (segment, axis), others are specific (pinnatifid) and some are very specific (pinnatisect). In many cases the specific terms are incomplete, for example, there are special names for primary and secondary stalked or sessile segments (pinna and pinnule), but there are none for such segments of higher order. Although it might be logical to propose appropriate terms for those segments without special names, it does not seem to be necessary to do so. The general term segment can be suitably modified to provide them with a name. Likewise, it seems better to describe special structures or characters without introducing new terms. Terms already available may be used in special ways to meet the requirements of particular circumstances. An author may define his terms, if he uses them in unusual ways, and thereby maintain clarity and also avoid the unnecessary multiplication of terms.

Some terms, although adequately defined, are difficult to apply in certain cases. In a number of structures or characters, fern leaves exhibit a continuous gradation from one condition to another and the application of a term to the intermediate conditions will always be difficult. For example, there may be no sharp distinction between an alate petiole and a decurrent lamina base. The variable nature of plants will inevitably lead to some difficulties of description.

I have not undertaken the study necessary to treat adequately the many special terms for the different kinds of venation and such terms have not been included. I wish to thank Conrad V. Morton, Karel U. Kramer, Kenneth A. Wilson, Adriance S. Foster and Alice F. Tryon for their suggestions during the preparation of this paper. I have not been able to eliminate all differences of opinion but their constructive criticisms have been most helpful. Mr. Johannes von Gumppenberg has prepared the plate.

I. *The fern leaf and its parts.*

1. *Leaf, frond*: the whole leaf, including the petiole and the lamina. The term frond has traditionally be used for the fern leaf and it is perfectly correct to employ it. However, ferns have leaves and there seems to be no need to have a special term for them.

2. *Lamina, blade*: the part of the leaf that bears the expanded, herbaceous tissues, the part of the leaf borne by the petiole; or its equivalent. In compound leaves the lamina includes all of the leaf beyond (apical to) the base of the basal branch of the primary axis. In simple leaves it includes all of the leaf beyond the base of the expanded, herbaceous tissues, not including, however, the wing of an alate petiole. (There does not seem to be a term for the equivalent of lamina in leaflets and perhaps none is needed).

3. *Segment*: a portion of a lamina that has an axis (either a central axis, or a stalk, or both)

and is joined only to another axis or is also connected laterally to adjacent portions for not more than half its length. That is, a segment is at least as separate from adjacent segments as it is joined to them. A segment includes its stalk, if it has one; the extent of a segment is from its apex to the axis to which it is attached. This definition has been made rather specific in order to afford a distinction between segment and lobe. A segment is *primary, secondary, tertiary,* etc. as it is borne by (attached to) a primary, secondary, tertiary, etc. axis, respectively.

Segment is a general term and may be used as such, or in place of a specific term, or when no specific term is available.

Specific terms for segments are the following (3a-3e):

3a. *Leaflet*: a stalked or sessile segment. This term is not commonly used for parts of fern leaves.

3b. *Pinna*: a leaflet that is a primary segment of a lamina. A stalked or sessile terminal segment of a lamina is considered to be a *terminal pinna.*

3c. *Pinnule*: a leaflet that is a secondary segment of a lamina (a primary segment of a pinna); or any leaflet that is an ultimate segment of the second or higher order. If the term is employed in the second sense, its definition should be given. A stalked or sessile terminal segment of a pinna is considered to be a *terminal pinnule.*

3d. *Ultimate segment*: a segment of the last order; a segment with an axis that does not bear segments. This term usually would not replace either pinna or pinnule.

3e. *Penultimate segment*: a segment of the next-to-last order; a segment with an axis that bears ultimate segments.

4. *Lobe*: a separate portion of a lamina, or of a segment, that is fully joined at its base to expanded, herbaceous tissue. A line drawn between adjacent sinuses defines the base of the lobe. This definition has been made rather specific in order to afford a distinction between lobe and segment.

4a. *Lacinia*: a narrow lobe.

The distinction between lobe and tooth or crenation is a relative one and it is based on the relative size of the part to the whole of the lamina or segment that bears it. A lobe is a part of the lamina or segment proper, a tooth or crenation is a part of the margin. A rather prominent crenation of the margin of a broad lamina might be a lobe of a narrow lamina.

5. *Tooth*; 6. *Crenation*; etc.: a separate part of the margin of a lamina or of a segment.

7. *Axis*: a portion of the vascular system (and its associated tissues), of a leaf, that bears apical branches (a *stalk*) or lateral subordinate branches (a *central axis*); or both the stalk and the central axis. In a compound leaf or segment the base of the first (basal) branch is considered to be the apex of the stalk and the base of the central axis. In a simple leaf or segment the base of the expanded, herbaceous tissues is considered to define the apex of the stalk and the base of the central axis; this does not include, however, the wing of an alate stalk (see 7 j).

An axis is *primary, secondary, tertiary,* etc. as it is the main axis of a leaf or of a segment, or a primary, or secondary branch of that axis, respectively. There is no sharp distinction between an axis and a vein and occasionally, where a central axis diminishes at its apex, there are transitions between them. A branch, an axis, or a rachis may be referred to as *ultimate or penultimate* in the same sense that the terms are used for segments.

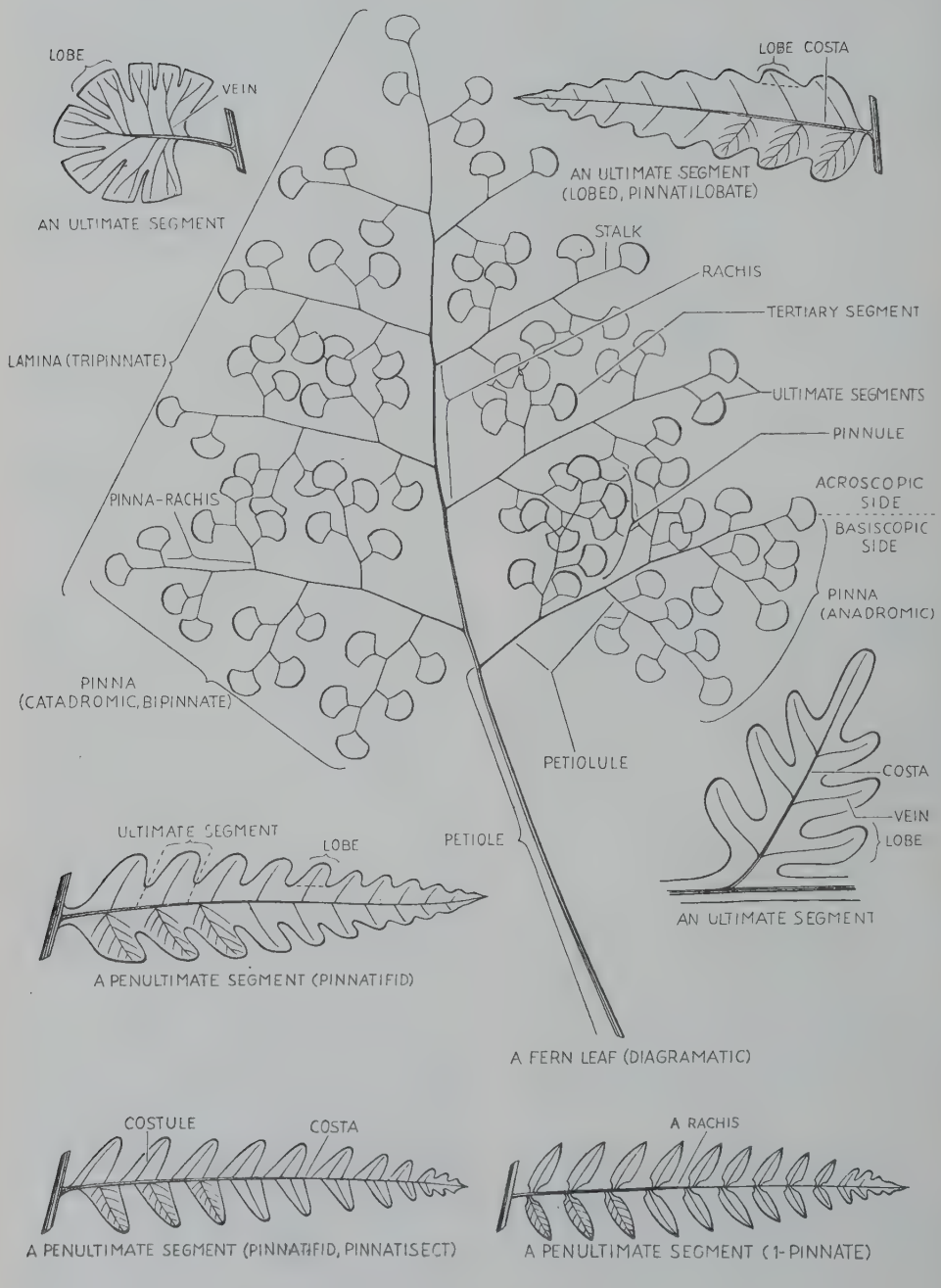
Axis is a general term and may be used as such, or in place of a specific term, or when no specific term is available; stalk and central axis may be used in the same manner. If some of the segments on a central axis are stalked or sessile, and others are adnate or joined, the appropriate specific term (7c-7g) may be used on the basis of the predominent condition of the segments, or a general term may be used.

Specific terms for axes are the following (7a-7j):

7a. *Petiole, stipe*: the stalk of a lamina. The term stipe has traditionally been used for the petiole of fern leaves and it is perfectly correct to employ it. However, it is a petiole and there seems to be no need to have a special term for it. A lamina that has a petiole is *petiolate.*

7b. *Petiolule*: the stalk of a segment; or the stalk of a primary segment of the lamina (pinna). I believe that it is better not to restrict this term to the stalk of a pinna. It is useful for the stalk of a segment of any order, and these can be distinguished, if desirable, by the name of the segment. A segment that has a petiolule is *petiolulate.*

7c. *Rachis, rhachis*: generally (a rachis), a central axis that bears stalked or sessile segments; specifically (the rachis, rachis), a rachis that is the primary axis of a lamina. If the lateral segments are stalked, the terminal segment is considered to be stalked; the rachis, then, terminates at the apical branch.


LOBE
VEIN
AN ULTIMATE SEGMENT
LOBE COSTA
AN ULTIMATE SEGMENT
(LOBED, PINNATILOBATE)
STALK
RACHIS
TERTIARY SEGMENT
LAMINA (TRIPINNATE)
ULTIMATE SEGMENTS
PINNULE
ACROSCOPIC SIDE
BASISCOPIC SIDE
PINNA-RACHIS
PINNA (ANADROMIC)
PINNA (CATADROMIC, BIPINNATE)
PETIOLULE
COSTA
VEIN
LOBE
AN ULTIMATE SEGMENT
ULTIMATE SEGMENT
LOBE
PETIOLE
A PENULTIMATE SEGMENT (PINNATIFID)
A FERN LEAF (DIAGRAMATIC)
COSTULE
COSTA
A RACHIS
A PENULTIMATE SEGMENT (PINNATIFID, PINNATISECT)
A PENULTIMATE SEGMENT (1-PINNATE)

7d. *Pinna-rachis, secondary rachis, rachilla, rhachilia*; 7e. *Pinnule-rachis, tertiary rachis;* 7f. *Quaternary rachis*; etc.: a rachis of a primary, secondary, tertiary, etc. segment of the lamina, respectively.

7g. *Costa*: a central axis, or one of several principal axes, that bears adnate segments, connected segments, or does not bear segments. A lamina or segment that has a costa is *costate.*

7h. *Costule*: an axis which is the branch of a costa. Rarely, a costule may bear axes and then each of these may be called a *secondary costule.* A lamina or segment that has costules is *costulate.*

7i. *Midrib*: a central axis of a lamina, or portion of a lamina; or an elevated central axis; or the elevated portion of such an axis. There seems to be little reason to retain this term as others can be better employed.

7j. *Alate (winged) axis, petiole* or *rachis*: an axis with a flattened, usually membranous, lateral extension (a wing). A wing is often composed of expanded, herbaceous tissues and is frequently connected with the same tissues of the lamina or of a segment. In such cases there may be no sharp distinction between a segment base or lamina base and a wing. The tissue may be considered a wing if the outer edge is parallel or convex to the main axis. A wing is considered to be a part of the axis and its presence does not effect the definitions of the specific kinds of axes or segments. The tissue should be considered as segment or lamina base if the outer edge is concave or at an angle to the main axis. A decurrent lamina or segment base has the tissue diminishing basally along the axis; a surcurrent segment base has the tissue diminishing apically along the axis.

8. *Vein*: a vascular strand, associated with expanded, herbaceous tissue, that is either unbranched or that bears branches substantially equal to itself. A vein is *primary, secondary, tertiary,* etc. as it is a central or basal vein, or a primary or secondary branch, etc., respectively. *Nerve* is a somewhat objectionable synonym .

8a. *Veinlet*: a small or ultimate vein.

8b. *Midvein*: a central vein of a lamina or portion of a lamina; or a central vein in an axis with an odd number of veins. *Midnerve* is a somewhat objectionable synonym.

II. *Some descriptive terms pertaining to the fern leaf.*

Only a few of the many terms that may be used to describe the fern leaf are included here. These are the terms especially applicable to the fern leaf, although their use is not necessarily restricted to it. Some terms, adequately treated in glossaries, are mentioned only briefly.

A. The arrangement of parts.

The more common terms for the kinds of arrangement of axes, segments or veins are the following: *pinnate, pedate, palmate, radiate, digitate, flabellate* and *ternate.* The term pinnate is properly used in reference to a type of arrangement, however, it has also been used to mean pinnately compound (1-pinnate). It is important to make clear how the term is used.

The following are specific terms:

1. *Imparipinnate, odd pinnate*: with pinnately arranged, stalked or sessile, lateral segments and a terminal one.

2. *Paripinnate, abruptly pinnate*: with pinnately arranged, stalked or sessile, lateral segments, a terminal one lacking.

3. *Anadromic*: the basal branch or vein is on the acroscopic side.

4. *Catadromic*: the basal branch or vein is on the basiscopic side.

The above two terms apply to branching or venation in a lamina or segment that has branches of the second or higher order.

B. The complexity of parts.

The terms included here are sometimes considered to refer to the cutting, dissection or division of the lamina or segment. However, such terms may imply more than we know about a particular leaf and it seems better to express the character without implications. The appropriate term is used to express the greatest, or maximum, complexity of the lamina or segment. It is usually also desirable to describe the predominant degree of complexity if this is less than the maximum degree. The terms simple and compound are used for leaves in a different sense than they are used for ovaries, fruits, etc.; they are perhaps not especially appropriate for leaves but there are no other terms that seem to be applicable.

1. *Simple*: without segments, or with adnate or laterally joined segments.

1a. *Lobed, lobate*: with lobes.

1b. *Laciniate*: with laciniae.

These two terms may be modified by shallowly or slightly, moderately, deeply, or their equivalents.

The following are specific terms for a simple lamina or segment in which the lateral parts are pinnately arranged (1c-1g).

1c. *Pinnatilobate*: with pinnately arranged lobes.

1d. *Pinnatifid*: the pinnately arranged ultimate segments are adnate, or joined for not more than half their length. This term may be modified by shallowly or slightly, moderately, deeply, as the ultimate segments are about half joined, about a third or less joined, or adnate, respectively. Or the following two terms may be used.

1e. *Pinnatipartite:* pinnatifid with the segments joined for about a third of their length or less.

1f. *Pinnatisect*: pinnatifid with the segments adnate.

1g. *Bipinnatifid*: pinnatifid with the primary segments pinnatifid.
This term has sometimes been used incorrectly to refer to the condition that is properly called pinnate-pinnatifid (or its equivalent). Bipinnatifid can only mean "twice pinnatifid".

1h. Terms for other types of arrangements may be compounded to express conditions similar to 1c-1f as they may be appropriate, for example: *palmatilobate, palmatifid, pedatilobate, pedatifid.*

The following general terms — compound and decompound — are usually replaced by special terms that refer to a pinnate type of arrangement as well as to the degree of complexity. Such special terms are actually contractions of "pinnately compound", "pinnately twice compound", etc. General terms are used for other types of arrangement combined with degree of complexity, for example: *palmately compound.*

In all cases the definitions refer to the highest order of segments present.

2. *Compound*: with primary segments that are stalked or sessile.

2a. *1-pinnate, once pinnate, simply pinnate, pinnate*: pinnately compound. The term pinnate has been used to mean pinnately compound although it is properly used in reference to a type of arrangement. Its application in reference to the compound condition should be made clear.

3. *Decompound*: with secondary, or tertiary, or quaternary, etc. segments that are stalked or sessile; twice, or more, compound.

3a. *Bipinnate, 2-pinnate, twice pinnate*; 3b. *Tripinnate, 3-pinnate*; 3c. *Quadripinnate, 4-pinnate*; etc.: pinnately decompound with secondary, tertiary, quaternary, etc. segments, respectively.

4. The above specific terms may be employed separately to describe the complexity of a lamina or segment, for example, "lamina bipinnate the pinnules pinnatifid", "lamina 1-pinnate the pinnae pinnatisect". They may also be compounded to express the total complexity of the lamina or segment. Then the term for the number of times the lamina or segment is compound is followed by the term for the complexity of the simple penultimate segments. For example, *pinnate-pinnatifid, bipinnate-pinnatifid, bipinnate-pinnatisect, tripinnate-pinnatifid,* etc. The hyphen in these terms may be replaced with a plus sign to avoid possible confusion with such usuage as "bipinnate-tripinnate" in which the dash means "to".

C. The margin.

The terms *entire, undulate, repand, crenate* and *serrate* are commonly used to describe the margin of a lamina or segment.

D. The ramification of parts.

The ramification of an axis or vein is expressed by the number of times it is forked or branched; this number is always one less than the number of terminal (ultimate) branches or veins.

III. *Terms relating to place or position.*

A. With respect to apex or base.

1. *Basal*: at or toward the base.

2. *Proximal*: at or toward the point of attachment.

3. *Apical*: at or toward the apex. *Terminal*: in reference to a part borne at or nearest to the apex.

4. *Distal*: remote from the point of attachment.

5. *Central*: at or toward the center or central region.

Upper and *lower* may be used in only one manner for apex-base relations: "upper pinnae of the lamina pinnatifid, lower pinnae of the lamina bipinnate". Such expression should not be used for segments because of possible confusion with upper or lower side.

B. With respect to a side.

1. *Acroscopic*: the side of the segment or axis that is (or is considered to be) directed toward, or facing, the apex of the axis upon which it is

borne. *Upper, superior*: in reference to a part borne on this side.

2. *Basiscopic*: the side of the segment or axis that is (or is considered to be) directed, or facing, away from the apex (toward the base) of the axis upon which it is borne. *Lower, inferior*: in reference to a part borne on this side.

The above two terms are applicable to any segments, and to axes of the second or higher order. In reference to the lamina or primary axis *lateral* would be used, for both sides, as it may be as a general term for segments or axes of higher order.

3. *Adaxial, upper, superior*: the side of the leaf that is (or is considered to be) directed toward the axil of the leaf and the stem; and the equivalent side of a segment or axis. *Above*: in reference to this side.

4. *Abaxial, lower, under, inferior*: the side of the leaf that is (or is considered to be) directed away from the axil of the leaf and the stem; and the equivalent side of a segment or axis. *Beneath*: in reference to this side.

The terms *dorsal* and *ventral* have been used in botany but since their definitions may be interchanged it is best to abandon them. The word "below" is not mentioned as a synonym of "beneath" because it may imply "basal".

MERCKIA CHAM. & SCHLECHT., MERKIA BORKH. AND WILHELMSIA REICHB.

J. McNeil (Reading, G.B.)

The genus *Merckia* Cham. & Schlecht. comprises a single species confined to north-eastern Asia and north-western America (cf. Polunin 1959, p. 174); it has been regarded by most American authors as a section or subgenus of *Arenaria* L. (cf. Fernald 1919, Maguire 1951), but the writer's current work on this group of the Caryophyllaceae leads him to the conclusion that European botanists are more correct in maintaining it as a distinct monotypic genus (cf. Pax & Hoffmann 1934, Muravjeva 1936).

The species concerned was first published by Seringe in de Candolle's "Prodromus" (1824) on the basis of a plant collected in Kamschatka between 1789 & 1791 by Carl Heinrich Merck, the German explorer. (cf. Stresemann 1948). Although a little dubious as to its generic position, Seringe gave it the name *Arenaria physodes*, adopting the specific epithet from F. E. L. Fischer's manuscript name "*Merkia physodes*". Seringe cites the collector as "Merk", without a 'c'.

Two years later (1826) Chamisso and Schlechtendal described a new genus for the plant, adopting Fischer's manuscript name, but spelling it as *Merckia*. In 1828 in his "Conspectus", Reichenbach lists a new generic name, *Wilhelmsia*, basing it on "*Merkia* Fisch. non Borkh.". In his "Handbuch" (1837), he restores the name *Merkia* (sic) and no other author appears to have questioned the legitimacy of the name *Merckia* Cham. & Schlecht.

However in 1792, Borkhausen had described in his "Plantarum Germaniae" a genus *Merkia* in the Hepaticae, naming it "in honorem jam defuncti Dni. Merk amici atque fautoris mei . . .". Borkhausen's friend and patron was the distinguished German author and critic Johann Heinrich Merck (1741-1791). *Merkia* Borkh. has been regarded as synonymous with *Metzgeria* Raddi (1820) (Schiffner1909), and on this interpretation would require to replace it, unless conservation of *Metzgeria* was proposed and accepted.

The question that now arises is whether *Merckia* Cham. & Schlecht. and *Merkia* Borkh. can be maintained as separate names, or whether they are simply orthographic variants. (If they were to be treated as separate names a further point would arise; namely, whether they are not so similar as to be a source of confusion and so require to be rejected under Article 75.).

The few published references to *Merkia* Borkh. (e.g. Braun 1821, Reichenbach 1828 p. 31, Lindberg 1877) all spell it without a 'c', but there is no such constancy in *Merckia* Cham. & Schlecht., because not only Reichenbach (1828, 1837), but also Fischer himself (according to Seringe) used the form 'Merkia' for the caryophyllaceous genus. The derivation of the names themselves is ample demonstration that there is no basis to the difference in spelling other than the orthographic whims of the respective authors, for although the genera are

named after two different persons, all the evidence (Allgemeine Deutsche Bibliographie, Streseman (1948), library catalogues etc.) points to both men using the same spelling, namely 'Merck', with a 'c'. This indeed was the common spelling of the name until the middle of the 19th century when the orthographically more correct form 'Merk' began to replace it.

It is proposed, therefore, to treat the two names as orthographic variants, *Merckia* Cham. & Schlecht. becoming a later homonym of *Merkia* Borkh. The generic name *Wilhelmsia* Reichb. must therefore replace *Merckia* Cham. & Schlecht.:

Wilhelmsia Reichb., Consp. 206. (1828), non *Wilhelmsia* Koch in Linnaea 21: 400. (1848) (Gramineae).
Merckia Fischer ex Cham. et Schlecht. in Linnaea 1: 59. (1826) ("*Merkia*" Reichb., Handb. 298. 1837), non *Merkia* Borkh., Plant. Germ. 156. (1792)
Arenaria L. "Subgenus vel Sectio" *Merckia* (Cham. & Schlecht.) Benth. in Benth. & Hook., Gen. Pl. 1: 151. (1862)
Arenaria L. Section *Merckia* (Cham. & Schlecht.) Post & Kuntze, Lexicon 43. (cf. Preface p. v.) (1903).
One species:

W. physodes (Ser.) McNeill, comb. nov.: *Arenaria physodes* Fisch. ex Ser. in D.C., Prodr. 1: 413. (1824) (≡ *Merckia physodes* (Ser.) Cham. & Schlecht.).

Mention should perhaps be made of two other generic names — *Wilhelmsia* Koch and *Moerckia* Gottsche. The former, a later homonym of *Wilhelmsia* Reichb. has only one described species (*W. caucasica* Koch), and is a taxonomic synonym of *Koeleria* Pers. *Moerckia* Gottsche, like *Merkia* Borkh. is a genus of the Jungermanniales, but commemorates the Danish lawyer A. Mörch, who collaborated in the Flora Danica. Although there are a number of orthographic variants of the name (eg. "*Moerchia*", "*Mörckia*", "*Moerkia*") it seems quite maintainable as distinct from *Merkia* or its variant *Merckia*.

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NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM V *

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

SCROPHULARIACEAE

7485. **Anarrhinum** Desfontaines, Fl. Atl. **2**: 51. Oct 1798.
T.: *A. pedatum* Desfontaines (*typ. cons.*).
(=) *Simbuleta* Forskål, Fl. Aeg.-Arab. 115. 1775.
T.: *S. forskaohlii* J. F. Gmelin ('*Forskåhlii*') (Syst. **2**: 242. 1791).

†7510. **Tetranema** Bentham, Bot. Reg. **29**: *t.* 52. 1 Oct 1843.
T.: *T. mexicanum* Bentham.

Note: Conservation superfluous: *Tetranema* Sweet, Hort. Brit. ed. 2. 149 (1830), is a *nomen nudum.*

7517. **Manulea** Linnaeus, Syst. Nat. ed. 12. 385, 419; Mant. 12, 88. Oct 1767.
T.: *M. cheiranthus* (Linnaeus) Linnaeus (*Lobelia cheiranthus* Linnaeus).
(=) *Nemia* P. J. Bergius, Descr. Pl. Cap. 160, 162. Sep 1767.

7518. **Chaenostoma** Bentham, Comp. Bot. Mag. **1**: 374. 1 Jul 1836.
T.: *C. aethiopicum* (Linnaeus) Bentham (*Buchnera aethiopica* Linnaeus) (*typ. cons.*).
(=) *Palmstruckia* Retzius, Obs. Bot. Pugil. 15. 1810.
T.: *Manulea foetida* (Andrews) Persoon (*Buchnera foetida* Andrews).

7532. **Limnophila** R. Brown, Prodr. 442. Mar 1810.
T.: *L. gratioloides* R. Brown, nom. illeg. [*L. indica* (Linnaeus) Druce, *Hottonia indica* Linnaeus].
(≡) *Hydropityon* K. F. Gaertner, Fruct. **3**: 19. 1805.
(=) *Ambuli* Adanson, Fam. **2**: 208. 1763 prim.
LT.: *Ambulia aromatica* Lamarck (Enc. **1**: 128. Dec 1783).
(=) *Diceros* Loureiro, Fl. Cochinch. 381. 1790.
T.: *D. cochinchinensis* Loureiro.

Note: (−) *Ambulia* Lamarck, Enc. **1**: 128 (1783), ≡ *Ambuli* Adanson (1763), and is therefore illegitimate.

7534. **Stemodia** Linnaeus, Syst. Nat. ed. 10. 1091, 1118, 1374. Mai-Jun 1759.
T.: *S. maritima* Linnaeus.
(≡) *Stemodiacra* P. Browne, Hist. Jamaica 261. 1756.

7546. **Bacopa** Aublet, Pl. Guiane 128. 1775.
T.: *B. aquatica* Aublet.
(=) *Moniera* P. Browne, Hist. Jamaica 269 1756.
(=) *Brami* Adanson, Fam. **2**: 208. 1763 prim.

7549. **Micranthemum** A. Michaux, Fl. Bor.-Am. **1**: 10. 1803 trim. 1.
T.: *M. orbiculatum* A. Michaux, nom. illeg. [*Globifera umbrosa* [Walter] J. F. Gmelin; *M. umbrosum* (J. F. Gmelin) Blake].
(≡) *Globifera* J. F. Gmelin, Syst. **2**: 32. 1791 sero.

Note: Walter's epithet in Fl. Carol. 63 (1788) under *Anonymos* was 'umbros.' The period appears after no epithet in Walter except definitely abbreviated ones. Gmelin also writes 'Umbros.' but uses periods also after unabbreviated epithets. We agree with Blake and accept the complete epithet (Blake, Rhodora **17**: 131. 1915).

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* Continued from Taxon 8: 86. 1960.

7556. **Glossostigma** Wight et Arnott ex Arnott, Nova Acta Acad. Leop.-Carol. **18**: 355. 1836.
T.: *G. spathulatum* Arnott, nom. illeg. [*Limosella diandra* Linnaeus, *G. diandrum* (Linnaeus) O. Kuntze].
(≡) *Peltimela* Rafinesque, Atl. Journ. 199. 1833.

7559. **Artanema** D. Don in Sweet, Brit. Fl. Gard. ser. 2. **3**: *t. 234*. 1 Apr 1834.
T.: *A. fimbriatum* (R. Graham) D. Don (*Torenia*? *fimbriata* W. J. Hooker ex R. Graham).
(=) *Bahel* Adanson, Fam. **2**: 210. 1763 prim.

7592. **Rehmannia** Liboschitz ex Fischer et Meyer, Ind. Sem. Horti Petrop. **1**: 36. 1835.
T.: *R. sinensis* (Buchoz) Liboschitz ex Fischer et Meyer (*'chinensis'*) (*Sparmannia sinensis* Buchoz).

Note: *Rehmannia* was superfluous when published because of (≡) *Sparmannia* Buchoz, Pl. Nouvellem. Découv. **3**: *t. 1* (1779), based on the same type; hence the conservation is still necessary even now that *Sparmannia* Buchoz (1779) is no longer available because of (4957) *Sparmannia* Linnaeus f. (1781) (*nom. cons.*).

7602. **Seymeria** Pursh, Fl. Am. Sept. **2**: 736. Jan 1814.
T.: *S. tenuifolia* Pursh, nom. illeg. [*Afzelia cassioides* [Walter] J. F. Gmelin 1791, *S. cassioides* (J. F. Gmelin) Blake] (*typ. cons.*).
(≡) *Afzelia* J. F. Gmelin, Syst. **2**: 927. 1792 ('1791').

7632. **Cordylanthus** Nuttall ex Bentham in A. P. Decandolle, Prodr. **10**: 597. Apr 1846.
T.: *C. filifolius* Nuttall ex Bentham, nom. illeg. [*Adenostegia rigida* Bentham, *C. rigidus* (Bentham) Jepson].
(≡) *Adenostegia* Bentham in Lindley, Nat. Syst. ed. 2. 445. 1836.

7649. **Rhynchocorys** Grisebach, Sicil. Fl. Rumel. **2**: 12. 1844.
T.: *R. elephas* (Linnaeus) Grisebach (*Rhinanthus elephas* Linnaeus).
(≡) *Elephas* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

BIGNONIACEAE

7668. **Cuspidaria** A. P. Decandolle, Bibl. Genève ser. 2. **17**: 125. Sep 1838 (Rev. Bignon. 9. 1838).
T.: *C. pterocarpa* (Chamisso) A. P. Decandolle (Prodr. **9**: 178. 1845) (*Bignonia pterocarpa* Chamisso) (*typ. cons.*).
(H) *Cuspidaria* (A. P. Decandolle) Besser, Enum. Plant. Volhyn. Podol. **2**: 104. 1822 [CRUCIF.].

Note: Decandolle's statement on p. 138 of the Bibl. Genève ser. 2. **17**: 'Ce genre est fondé sur le *Bignonia tetraquetra* de Chamisso' was evidently meant to apply to *Bignonia pterocarpa* of Chamisso as is clear from Decandolle's treatment of the genus in Prodr. **9**: 177 where *B. tetraquetra* is left in *Bignonia* (on p. 168). The illegitimate *C. trifoliata* of the Bibl. Genève (identical with *'B. tetraquetra'*) is correctly referred to *C. pterocarpa* in the *Prodromus*.

7673. **Haplolophium** Chamisso, Linnaea **7**: 556. 1832 ('*Aplolophium*'); corr. Endlicher, Gen. Pl. 712. Jan 1839.
T.: *H. bracteatum* Chamisso ('*Aplolophium*').
(V) *Aplolophium* Chamisso, Linnaea **7**: 556. 1832.

7697. **Lundia** A. P. Decandolle, Bibl. Genève **17**: 127. Sep 1838 (Rev. Bignon. 11. 1838).
T.: *L. glabra* A. P. Decandolle (Prodr. **9**: 180. 1 Jan 1845) (*typ. cons.*).
(H) *Lundia* H. C. F. Schumacher, Beskr. Guin. Pl. **2**: 5 [231]. 1827 (or 1828-29?) [FLACOURT.].
T.: *L. monacantha* H. C. F. Schumacher.

7760. **Colea** Bojer ex A. P. Decandolle, Prodr. **9**: 240. 1 Jan 1845.
T.: *C. mauritiana* Bojer ex A. P. Decandolle, nom. illeg. [*Bignonia colei* Bojer ex W. J. Hooker, *C. colei* (Bojer ex W. J. Hooker) M. L. Green] (*typ. cons.*).
(=) *Uloma* Rafinesque, Fl. Tell. **2**: 62. 1837 quadrim. 1 ('1836').
T.: *U. telfairiae* (Bojer ex W. J. Hooker) Rafinesque ('*telfairia*') (*Bignonia telfairiae* Bojer ex W. J. Hooker).

Note: *Tripinna* Loureiro, Fl. Cochinch. 391 (1790) [with *Tripinnaria* Persoon, Syn. Pl. **2**: 173 (1806)], is a Verbenacea (*Vitex!*); see Merrill, Trans. Am. Philos. Soc. ser. 2. **24**: 335 (1935).

7766. **Tourrettia** Fougeroux, Mém. Acad. Sci. Paris **1784**: 205. 1787 ('*Tourretia*'); corr. Schreber, Gen. **2**: 406. 1791.
T.: *T. lappacea* (L'Héritier) Willdenow (Sp. Pl. **3**: 263. 1803) (*Dombeya lappacea* L'Héritier).
(V) *Tourretia* Fougeroux, Mém. Acad. Sci. Paris **1784**: 205. 1787.
(≡) *Dombeya* L'Héritier, Stirp. Nov. 33. Apr 1786 (etiam vide 5053).

Note: *Tourrettia* was the spelling of Dombey's manuscript name as cited by L'Héritier, Stirp. Nov. 33 (1786).

OROBANCHACEAE

†7792. **Epifagus** Nuttall, Gen. **2**: 60. Mai 1818.
T.: *E. americanus* Nuttall, nom. illeg [*Orobanche virginiana* Linnaeus, *E. virginiana* (Linnaeus) Barton].

Note: Conservation superfluous: *Leptamnium* Rafinesque was not validly published until January 1819. However, the conservation does make it possible to reject the later but etymologically more correct *Epiphegus* C. Sprengel, Neue Entd. **1**: 264 (1819 or 1820), which might otherwise be taken up as an "orthographic correction."

GESNERIACEAE

7800. **Ramonda** L. C. Richard in Persoon, Syn. Pl. **1**: 216. 1805.
T.: *R. pyrenaica* Persoon, nom. illeg. [*Verbascum myconi* Linnaeus; *R. myconi* (Linnaeus) H. G. L. Reichenbach].
(H) *Ramondia* Mirbel in A. P. Decandolle, Bull. Soc. Philom. Paris **2**: 179. 1801 [PTERID.].
T.: *R. flexuosa* (Linnaeus) Mirbel (*Ophioglossum flexuosum* Linnaeus).

†7808. **Oreocharis** Bentham in Bentham et Hooker, Gen. Pl. **2**: 1021. Sep-Oct 1867.
T.: *O. benthami* C. B. Clarke (in A. et C. Decandolle, Monogr. Phan. **5**: 63. 1883) (*Didymocarpus oreocharis* Hance) (*typ. cons.*).

Note: Conservation superfluous: *Oreocharis* Lindley, Veg. Kingd. 656 (1846), is a *nomen nudum*. There is a reference to '*Oreocharis* Decaisne'. This is not a genus but probably *Lithospermum* sect. *Oreocharis*; but since this is not actually stated, Lindley's reference remains dubious. Since we propose to keep all unnecessarily conserved names on the list, it would do no harm to omit *Oreocharis* Lindley 1846 here; incorporating it would mean that we accept this type of implied reference.

7809. **Didissandra** C. B. Clarke in A. et C. Decandolle, Monogr. Phan. **5**: 65. Jul 1883.
T.: *D. elongata* (Jack) C. B. Clarke (*Didymocarpus elongata* Jack) (*typ. cons.*).
(=) *Ellobum* Blume, Bijdr. 746. 1826 sem. 2.
T.: *E. montanum* Blume.

7810. **Didymocarpus** Wallich, Edinb. Philos. Journ. **1**: 378. 1819.
T.: *D. aromaticus* Wallich ex D. Don, Prodr. Fl. Nepal. 123. 1825 ('*aromatica*') (*typ. cons.*).
(=) *Henckelia* C. Sprengel, Anleit. ed. 2. **2**: 402. 20 Apr 1817.

Note 1: (=) *Roettlera* Vahl, Enum. **1**: 87 (1805) ('*Röttlera*'), is not available because of *Rottlera* Willdenow 1797 [EUPHORB.], a name commemorating the same person. However, Dr. B. L. Burtt (in litt.) has called our attention to *Henckelia* C. Sprengel, proposed as a substitute for *Roettlera* Vahl and therefore identical with it.

Note 2: Dr. Burtt (Notes Bot. Gard. Edinb. **21**: 198. 1954) has also given what seem to be valid reasons for preferring *D. oblongus* Wallich ex D. Don, Prodr. Fl. Nepal. 123 (1825), as the type. A formal proposal for retypification has not yet been made.

7824. **Aeschynanthus** Jack, Trans. Linn. Soc. **14**: 42. *t. 2, f. 3.* 1823 ('1825').
T.: *A. volubilis* Jack (*typ. cons.*).
(=) *Trichosporum* D. Don, Edinb. Philos. Journ. **7**: 84. 1822.

7835. **Acanthonema** J. D. Hooker, Bot. Mag. *t.* 5339. 1 Oct 1862.
T.: *A. strigosum* J. D. Hooker.
(H) *Acanthonema* J. G. Agardh, Vet.-akad. Handl. Stockholm **1846**: 13. 1848 [CHLOROPH.].
T.: *Conferva aculeata* Montagne.

7853. **Mitraria** Cavanilles, Anal. Ci. Nat. **3**: 230. Mar 1801.
T.: *M. coccinea* Cavanilles.
(H) *Mitraria* J. F. Gmelin, Syst. **2**: 771, 799. 1791 sero [BARRINGT.].
T.: *M. commersonia* J. F. Gmelin.
≡ *Commerçona* Sonnerat 1776.

7860. **Alloplectus** C. F. P. Martius, Nov. Gen. Sp. **3**: 53. 1829.
T.: *A. sparsiflorus* C. F. P. Martius (*typ. cons.*).
(=) *Crantzia* Scopoli, Intr. 173. 1777.
T.: *Besleria cristata* Linnaeus.
(=) *Vireya* Rafinesque, Specchio **1**: 194. 1 Jun 1814.
T.: *V. sanguinolenta* Rafinesque.

Note: (=) *Lophia* Desvaux in W. Hamilton, Prodr. Pl. Ind. Occid. 47 (1825), = *Crantzia* Scopoli (1777), and is therefore illegitimate.

7866. **Codonanthe** (C. F. P. Martius) Hanstein, Linnaea **26**: 209. Apr 1854 ('1853').
T.: *C. aggregata* (C. F. P. Martius) Hanstein (*Hypocyrta aggregata* C. F. P. Martius) (*typ. cons.*).
(H) *Codonanthus* G. Don, Gen. Hist. **4**: 166. 1838 [LOGAN.].
T.: *C. africana* G. Don.

Note: Codonanthus Hasskarl, Flora **25** (2) (Beibl.): 24 (Jul 1842), is a *nomen nudum*.

†7878. **Seemannia** Regel, Gartenflora **4**: 183. *t. 126.* 1855.
T.: *S. ternifolia* Regel.

Note: Conservation superfluous: *Seemannia* W. J. Hooker, Lond. Journ. Bot. **7**: 567 (1848), is not validly published ("in anticipation of future acceptance").

LENTIBULARIACEAE

7900. **Polypompholyx** J. G. C. Lehmann, Nov. Stirp. Pugil. **8**: 48. 1844.
T.: *P. tenella* (R. Brown) J. G. C. Lehmann (*Utricularia tenella* R. Brown) (*typ. cons.*).
(=) *Cosmiza* Rafinesque, Fl. Tell. **4**: 110. 1838 med. ('1836').
T.: *C. coccinea* Rafinesque, nom. illeg. (*Utricularia multifida* R. Brown).

ACANTHACEAE (incl. THUNBERGIACEAE)

7908. **Elytraria** A. Michaux, Fl. Bor.-Am. **1**: 8. 1803.
T.: *E. virgata* A. Michaux, nom. illeg. [*Tubiflora caroliniensis* [Walter] J. F. Gmelin, *E. caroliniensis* (J. F. Gmelin) Persoon].
(≡) *Tubiflora* J. F. Gmelin, Syst. Nat. **2**: 27. 1791 sero.

7914. **Thunbergia** Retzius, Phys. Saelsk. Handl. **1**(3): 163. 1780 ('1776').
T.: *T. capensis* Retzius.
(H) *Thunbergia* Montin, Vet.-akad. Handl. Stockholm **1773**: 288. *t. 11.* 1773 [RUBIAC.].
T.: *T. florida* Montin ex Retzius (Phys. Saelsk. Handl. **1**(3): 163. 1776) (*T. capensis* Montin ex Linnaeus f., Suppl. 292. 1781; non Retzius 1780).

7932. **Phaulopsis** Willdenow, Sp. Pl. **3**: 342. 1800 ('*Phaylopsis*'); corr. C. Sprengel, Anleit. ed. 2. **2**: 422. 20 Apr 1817.
T.: *P. parviflora* Willdenow, nom. illeg. [*Micranthus oppositifolius* J. C. Wendland, *P. oppositifolius* (J. C. Wendland) Lindau].
(V) *Phaylopsis* Willdenow, Sp. Pl. **3**: 342. 1800.
(≡) *Micranthus* J. C. Wendland, Bot. Beob. 38. 1798 (etiam vide 1313).

7972. **Crabbea** W. H. Harvey, Lond. Journ. Bot. **1**: 27. 1842.
T.: *C. hirsuta* W. H. Harvey.
(H) *Crabbea* W. H. Harvey, Gen. S. Afr. Pl. 276. 1838 [ACANTH.].
T.: *C. pungens* W. H. Harvey.

8028. **Tetramerium** C. G. Nees in Bentham, Bot. Voy. Sulphur 147. 8 Mai 1846.
T.: *T. polystachyum* C. G. Nees (*typ. cons.*).
(H) *Tetramerium* K. F. Gaertner, Fruct. **3**: 90. 1805 [RUBIAC.].
T.: *T. odoratissimum* K. F. Gaertner, nom. illeg. (*Ixora americana* Linnaeus).
(=) *Henrya* C. G. Nees in Bentham, Bot. Voy. Sulphur 148 [Mai 1846] *t. 49.* 14 Apr 1845.
T.: *H. insularis* C. G. Nees

Note: Tetramerium C. G. Nees was not monotypic when published: it included *T. polystachyum* and *T. nervosum.* Of both species figures are given on *t. 48* of Bentham's work. The date of *t. 48* is 14 April 1845 but since the new genus was not monotypic on that plate, Art. 41(2) does not apply and the genus dates from 8 Mai 1846.
Henrya Nees dates from 14 April 1845 because at that time the new genus was monotypic on *t. 49* which fulfilled the requirements of Article 41(2). The circumstance that more than one species was mentioned in the text (p. 148) in Mai 1846 is irrelevant.

8031. **Dicliptera** A. L. Jussieu, Ann. Mus. Hist. Nat. Paris **9**: 267. 1807 (Jul?). T.: *D. chinensis* (Linnaeus) A. L. Jussieu (*Justicia chinensis* Linnaeus) (*typ. cons.*).

(=) *Diapedium* C. Konig, Ann. Bot. Konig & Sims **2**: 189. 1806.

8039. **Mackaya** W. H. Harvey, Thes. Cap. **1**: 8. *t. 13*. 1859. T.: *M. bella* W. H. Harvey.

(H) *Mackaia* S. F. Gray, Nat. Arr. Brit. Pl. **1**: 320, 391. 10 Sep 1821 [PHAEOPH.].

Note: Another homonym: *Makaya* Arnott, Mag. Zool. Bot. **2**: 550 (1838) [OLAC.].

8042. **Schaueria** C. G. Nees, Ind. Sem. Hort. Ratisb. 1838 [Linnaea **13** (litt.): 119. 1839]. T.: *S. calycotricha* (Link et Otto) C. G. Nees (*Justicia calycotricha* Link et Otto).

(H) *Schauera* C. G. Nees in Lindley, Nat. Syst. ed. 2. 202. 1836 [LAURAC.].
≡ *Endlicheria* C. G. Nees 1833 (*nom. cons.*) (2811).
(=) *Flavicoma* Rafinesque, Fl. Tell. **4**: 63. 1838 med. ('1836').

Note 1: Rafinesque (l.c.) quotes two species, viz. 1. *F. capitata* Rafinesque (*Justicia flavicoma* Lindley), and 2. *F. paniculata* Rafinesque (*Justicia calycotricha* Link); *Justicia calycotricha* is the type of *Schaueria*.

Note 2: The Ind. Sem. Hort. Ratisb. 1838 was not seen by us.

8096. **Anisotes** C. G. Nees in A. P. Decandolle, Prodr. **11**: 424. Nov 1847. T.: *A. trisulcus* (Forskål) C. G. Nees (*Dianthera trisulca* Forskål).

(≡) *Calasias* Rafinesque, Fl. Tell. **4**: 64. 1838 med. ('1836').

†8097. **Jacobinia** C. G. Nees ex Moricand, Pl. Nouv. Amér. 156. *t. 92*. 1846. T.: *J. lepida* C. G. Nees ex Moricand.

Note: Conservation superfluous: (=) *Ethesia* Rafinesque, Fl. Tell. **4**: 63 (1838), is not available because of *Ethesia* Rafinesque, Fl. Tell. **3**: 60 (1837) [LILIAC.].

8100. **Trichocalyx** I. B. Balfour, Proc. Roy. Soc. Edinb. **12**: 87. 1884. T.: *T. obovatus* I. B. Balfour (*typ. cons.*).

(H) *Trichocalyx* Schauer, Nova Acta Acad. Leop.-Carol. **19** (suppl. 2): 86. 1841 [MYRT.].
≡ *Calytrix* Labillardière 1806.

RUBIACEAE

†8126. **Bikkia** Reinwardt, Syll. Pl. **2**: 8. 1825 vel 1826. T.: *B. grandiflora* Reinwardt, nom. illeg. [*B. tetrandra* (Linnaeus f.) A. Gray (*Portlandia tetrandra* Linnaeus f.)].

Note: Conservation superfluous: *Cormigonus* Rafinesque, Ann. Gen. Sci. Phys. **6**: 83 (1820), was a *nomen nudum*. There is no later valid publication.

8130. **Lerchea** Linnaeus, Mant. 155, 256. Oct 1771. T.: *L. longicauda* Linnaeus.

(H) *Lerchia* A. Haller ex Zinn, Catal. 30. Mai 1757 [CHENOPOD.] (etiam vide 2261).

8140. **Lucya** A. P. Decandolle, Prodr. **4**: 434. Sep 1830. T.: *L. tuberosa* A. P. Decandolle, nom. illeg. [*Peplis tetrandra* Linnaeus, *L. tetrandra* (Linnaeus) K. Schumann].

Note: (≡) *Dunalia* C. Sprengel, Pugil. 25 (1815), is rejected vs *Dunalia* Humboldt, Bonpland et Kunth 1818 (no 7380; see Taxon **7**: 188. 1958) and therefore not available. The conservation is not superfluous, however, because at the time of publication *Lucya* was superfluous and is hence illegitimate.

†8158. **Cruckshanksia** Hooker et Arnott, Bot. Misc. **3**: 361. 1 Mar 1833.
T.: *C. hymenodon* Hooker et Arnott.

Note: *Cruckshanksia* Miers, Trav. **2**: 529 (1826) (IRID.), was not validly published; there was no description.

8162. **Payera** Baillon, Bull. Soc. Linn. Paris **1**: 178. 1878.
T.: *P. conspicua* Baillon.
(H) *Payeria* Baillon, Adansonia **1**: 50. 1 Oct 1860 [MELIAC.].
T.: *P. excelsa* Baillon.

Note: Baillon clearly stated in 1878 that he was giving a name different from that of 1860, in a different family!

8181. **Wendlandia** Bartling ex A. P. Decandolle, Prodr. **4**: 411. Sep. 1830.
T.: *W. paniculata* (Roxburgh) A. P. Decandolle (*Rondeletia paniculata* Roxburgh) (*typ. cons.*).
(H) *Wendlandia* Willdenow, Sp. Pl. **2**: 275. 1799 [MENISP.] (etiam vide 2570).
≡ *Androphylax* Wendland 1798.

8183. **Augusta** Pohl, Pl. Bras. **2**: 1. 1828 sero. vel 1829 trim. 1; Flora **12**: 118. 28 Feb 1829.
T.: *A. lanceolata* Pohl (*typ. cons.*) [syn. tax.: *A. longifolia* (C. Sprengel) Rehder; *Ucriana longifolia* C. Sprengel].
(H) *Augusta* Leandro, Denkschr. Akad. Muenchen **7**: 235. 1819(?) ('1821') [COMPOS.] (etiam vide 9490).

Note 1: Variant spelling: (V) *Augustea* Pohl 1829, orth. mut. A. P. Decandolle, Prodr. **4**: 404 (1830).

Note 2: Taxonomic synonym of *Augusta lanceolata* Pohl: *A. longifolia* (C. Sprengel) Rehder based on *Ucriana longifolia* C. Sprengel, Syst. **1**: 761 (1824). The genus *Ucriana* C. Sprengel does not exist, Sprengel having adopted *Ucriana* Willdenow, Sp. Pl. **1**: 961 (1797) (= *Tocoyena* Aublet 1775), adding a new species to it.

8204. **Manettia** Mutis ex Linnaeus, Mant. 553, 558. Oct 1771.
T.: *M. reclinata* Linnaeus.
(H) *Manettia* Adanson, Fam. **2**: 242. 1763 prim. [AIZOAC.].
T.: *Mesembryanthemum noctiflorum* Linnaeus (Sp. Pl. 481. 1753).
≡ *Aridaria* N. E. Brown 1925.
(=) *Lygistum* P. Browne, Hist. Jamaica 142. 1756.
T.: *Petesia lygistum* Linnaeus (Syst. Nat. ed. 10. 894. 1759).

8209. **Cosmibuena** Ruiz et Pavon, Fl. Peruv. Chil. **3**: 2. 1802.
T.: *C. obtusifolia* Ruiz et Pavon, nom. illeg. (*typ. cons.*) [*Cinchona grandiflora* Ruiz et Pavon, *C. grandiflora* (Ruiz et Pavon) Rusby].
(H) *Cosmibuena* Ruiz et Pavon, Prodr. 10. 1794 [ROSAC.].
LT.: *Hirtella cosmibuena* Lamarck (vide I.C.B.N. **1956**: 271).

8215. **Schizocalyx** Weddell, Ann. Sci. Nat. Bot. ser. 4. **1**: 73. 1854 prim.
T.: *S. bracteosus* Weddell.
(H) *Schizocalyx* Scheele, Flora **26**: 568, 575. 14 Sep 1843 [LABIAT.].

Note: Another homonym: *Schizocalyx* C. F. Hochstetter, Flora **27** (Bes. Beil. 1): 1 (1844) [SALVADOR.].

8227. **Mitragyna** Korthals, Obs. Naucl. Ind. 19. 1839.
T.: *M. parvifolia* (Roxburgh) Korthals (*Nauclea parvifolia* Roxburgh) (*typ. cons.*).
(H) *Mitragyne* R. Brown, Prodr. 452. Mar 1810 [LOGAN./GENTIAN.].
≡ *Mitrasacme* Labillardière 1804.
(=) *Mamboga* Blanco, Fl. Filip. 140. 1837.
T.: *M. capitata* Blanco.

Note: (≡) *Stephegyne* Korthals in Temminck, Verh. Nat. Geschied. Nederl. Overz. Bezitt. 160 (22 Oct 1842), was a name substituted by Korthals for his own *Mitragyna* ('*Mitragyne*').

8228. **Uncaria** Schreber, Gen. **1**: 125. 1789 sem. 1.
T.: *U. guianensis* (Aublet) J. F. Gmelin (Syst. **2**: 370. 1791) (*Ourouparia guianensis* Aublet).
(≡) *Ourouparia* Aublet, Pl. Guiane 177. 1775.

8237. **Acranthera** Arnott ex Meisner, Gen. **1**: 162; **2**: 115. Sep 1838.
T.: *A. ceylanica* Arnott ex Meisner.
(=) *Psilobium* Jack, Malay. Misc. **2**(7): 84. 1822.
T.: *P. nutans* Jack.

8241. **Schradera** Vahl, Ecl. **1**: 35. *t.* 5. 1796 (1797?).
T.: *S. involucrata* (Swartz) K. Schumann in C. F. P. Martius, Fl. Bras. **6**(6): 295. 1889 (*Fuchsia involucrata* Swartz).
(H) *Schraderia* Heister ex Medikus, Phil. Bot. **2**: 40. 1791 [LABIAT.].
T.: *Salvia africana-caerulea* Linnaeus.
(=) *Urceolaria* Willdenow in Cothenius, Disp. 10. 1790.
T.: *U. exotica* J. F. Gmelin (Syst. **2**: 390. 1791 sero.).

Note: Schradera Vahl was monotypic on publication, the single species being called *S. capitata* by Vahl. Since, however, *Fuchsia involucrata* Swartz, Prodr. 62 (Jun 1788), was mentioned as a synonym, the name *S. capitata* was superfluous on publication and hence illegitimate. Willdenow, Sp. Pl. **2**: 238 (1799), treated Vahl's plant as specifically different from that of Swartz and kept the name *S. capitata* Vahl excl. syn. for the one species and coined the new name *S. cephalotes* Willdenow (nom. illeg.) for *Fuchsia involucrata* Swartz. K. Schumann (l.c.) made the legitimate combination *S. involucrata*. It might be argued that '*S. capitata* Vahl excl. synon.' should be the type of the genus *Schradera*. There is no legitimate name for that particular type, but the correct name for it is *S. exotica* (J. F. Gmelin) comb. nov. based on *Urceolaria exotica* J. F. Gmelin, Syst. **2**: 390 (1791), a species generally accepted as a taxonomic synonym. Since, however, *Urceolaria exotica* Willdenow was not considered by Vahl and *Fuchsia involucrata* was duly contained in the 'protologue' we think that the conserved type should be *Schradera involucrata.*

8244. **Coptophyllum** Korthals, Nederl. Kruidk. Arch. **2**: 161. 1850 ('1851').
T.: *C. bracteatum* Korthals.
(H) *Coptophyllum* G. Gardner, Lond. Journ. Bot. **1**: 133. 1842 [PTERID.].
T.: *C. buniifolium* G. Gardner.

8250. **Coccocypselum** P. Browne, Hist. Jamaica 144. 1756 ('*Coccocipsilium*'); corr. Schreber, Gen. **2**: 789. 1791 sem. 1.
T.: *C. repens* Swartz (*typ. cons.*) ('*Coccosipsilum*').
(V) *Coccocipsilum* P. Browne, Hist Jamaica 144. 1756.
(=) *Sicelium* P. Browne, Hist. Jamaica 144. 1756.

8265. **Pentagonia** Bentham, Bot. Voy. Sulphur. *t.* 39. 25 Oct 1844; 105. 14 Apr 1845.
T.: *P. macrophylla* Bentham.
(H) *Pentagonia* Heister ex Fabricius, Enum. ed. 2. 336. 1763 sero. [SOLAN.].
T.: *Atropa physalodes* Linnaeus (Sp. Pl. 181. 1753).
≡ *Nicandra* Adanson 1763 (*nom. cons.*, 7377).

Note: In the original conservation *Pentagonium* Schauer, Nova Acta Acad. Leop.-Carol. **19** (suppl. 1): 364 (1843) [ASCLEP.], is also cited as a homonym. This implied that *Pentagonia* and *Pentagonium* are orthographic variants that are to be treated as homonyms. This contradicts Art. 75 in which *Peponia* and *Peponium* are cited as different names. The name *Pentagonia* could have stood without conservation and *Pentagonium* could have remained free for separate use.

8285. **Gardenia** J. Ellis, Philos. Trans. Roy. Soc. **51**: 935. *t. 23.* 1761.
T.: *G. jasminoides* J. Ellis.

(H) *Gardenia* J. Colden, Ess. Philos. Soc. Edinb. **2**: 2. 1756 [INC. SED.].

Note: Warneria or *Varneria* Linnaeus (a typographical variation) is not validly published in Amoen. Acad. **4**: 136, 138 (1759). A simple reference to a Rumphius plate is not sufficient.

8296. **Villaria** Rolfe, Journ. Linn. Soc. Bot. **21**: 311. 1884.
T.: *V. philippinensis* Rolfe.

(H) *Vilaria* Guettard, Mém. Minéral. Dauphiné **1**: clxx; **2**: *t. 19.* 1779 [COMPOS.].
T.: *V. subacaulis* Guettard.

Note 1: Another homonym: *Villaria* Schreber, Gen. **2**: 685 (1791) [INC. SED.].

Note 2: Villaria Ventenat 1803 ('*Villarsia*'); orth. mut. Bally, Notice Historique .... Villar (1858), can hardly invalidate a different name; the name is *Villarsia* and this is not rejected in favour of *Villaria; Villarsia* Ventenat 1803 (no 6544) is itself a nomen conservandum. *Villaria* Rolfe was named after Father Hernandes Villar.

8312. **Zuccarinia** Blume, Bijdr. 1006. 1826 (vel 1827).
T.: *Z. macrophylla* Blume.

(H) *Zuccarinia* Maerklin, Ann. Wetter. Ges. Naturk. **2**: 252. 28 Apr 1811 [INC. SED.].
T.: *Z. verbenacea* Maerklin.

Note: Another homonym: *Zuccarinia* C. Sprengel, Syst. **4** (Cur. Pos.): 50 (1827) [RUBIAC.] ≡ *Jackia* Wallich in Roxburgh, Fl. Ind. **2**: 321 (1824).

8316. **Duroia** Linnaeus f., Suppl. 30, 209. 1781 sem. 2.
T.: *D. eriopila* Linnaeus f.

(−) *Pubeta* Linnaeus, Pl. Surin. 16. 23 Jun 1775.

8353. **Mesoptera** J. D. Hooker in Bentham et Hooker, Gen. Pl. **2**: 130. Apr 1873.
T.: *M. maingayi* J. D. Hooker.

(H) *Mesoptera* Rafinesque, Herb. Raf. 73. 1833 [ORCHID.].
≡ *Liparis* L. C. Richard 1818 (*nom. cons.*) (1556).

8357. **Cuviera** A. P. Decandolle, Ann. Mus. Hist. Nat. Paris **9**: 222. 30 Apr 1807.
T.: *C. acutiflora* A. P. Decandolle.

(H) *Cuviera* Koeler, Descr. Gram. Gall. Germ. 328 ('382'). 1802 [GRAM.].
T.: *C. europaea* (Linnaeus) Koeler (*Elymus europaeus* Linnaeus).

8365. **Timonius** A. P. Decandolle, Prodr. **4**: 461. Sep 1830.
T.: *T. rumphii* A. P. Decandolle, nom. illeg. [*Erithalis timon* C. Sprengel, *T. timon* (C. Sprengel) Merrill] (*typ. cons.*).

(=) *Porocarpus* J. Gaertner, Fruct. **2**: 473. 1791 sero.
T.: *P. helminthotheca* J. Gaertner.

(=) *Polyphragmon* Desfontaines, Mém. Mus. Hist. Nat. Paris **6**: 5. 1820.
T.: *P. sericeum* Desfontaines.

(=) *Helospora* Jack, Trans. Linn. Soc. **14**: 127. 1823 ('1825').
T.: *H. flavescens* Jack.

(=) *Burneya* Chamisso et Schlechtendal, Linnaea **4**: 188. Apr 1829.
T.: *B. forsteri* Chamisso et Schlechtendal, nom. illeg. (*Erithalis polygama* G. Forster).

Note: Nelitris J. Gaertner, Fruct. **1**: 134 (1788), belongs to the *Myrtaceae* and should not be listed here.

8388. **Psilanthus** J. D. Hooker, Hooker's Ic. Pl. **12**: 28. *t. 1129.* Apr 1873; in Bentham et Hooker, Gen. Pl. **2**: 115. 9 Apr 1873.
T.: *P. mannii* J. D. Hooker.

(H) *Psilanthus* (A. P. Decandolle) A. L. Jussieu ex M. J. Roemer, Syn. Pepon. 132, 198. 1846 [PASSIFL.].
T.: *P. viridiflorus* (Cavanilles) M. J. Roemer (*Passiflora viridiflora* Cavanilles).

Note: Psilanthus A. L. Jussieu, Ann. Mus. Hist. Nat. Paris **6**: 396 (1805), is a *nomen nudum* et *provisorium.*

8397. **Trichostachys** J. D. Hooker in Bentham et Hooker, Gen. Pl. **2**: 128. 9 Apr 1873.
T.: *T. longifolia* Hiern (in Oliver, Fl. Trop. Afr. **3**: 227. 1877).
(H) *Trichostachys* Welwitsch, Syn. Mad. Drog. Med. Angola 19. 1862 [PROTEAC.].
T.: *T. speciosa* Welwitsch.

8399. **Psychotria** Linnaeus, Syst. Nat. ed. 10. 929, 1364. Mai-Jun 1759.
T.: *P. asiatica* Linnaeus.
(≡) *Psychotrophum* P. Browne, Hist. Jamaica 160. 1756.
(=) *Myrstiphyllum* P. Browne, Hist. Jamaica 152. 1756.

8411. **Cephaëlis** Swartz, Prodr. 3, 45. Jun-Jul 1788 ('*Cephaelis*').
T.: *C. muscosa* (N. J. Jacquin) Swartz (*Morinda muscosa* N. J. Jacquin) (*typ. cons.*).
(=) *Evea* Aublet, Pl. Guiane 100. 1775.
T.: *E. guianensis* Aublet.
(=) *Carapichea* Aublet, Pl. Guiane 167. 1775.
T.: *C. guianensis* Aublet.
(=) *Tapogomea* Aublet, Pl. Guiane 157. 1775.
T.: *T. violacea* Aublet.

Note 1: Swartz did not use the diaeresis sign before 1797 in his Flora Ind. Occ. **1**: 435; in 1788 he wrote *Cephaelis;* neither did he use the digraph æ. Persoon, Synopsis **1**: 202 (1805), wrote *Cephælis.*

Note 2: Bullock, Taxon **5**: 53 (1956), defends the choice of *Tapogomea violacea* Aublet as the type species.

Note 3: (=) *Chesnea* Scopoli, Intr. 119 (1777), ≡ *Carapichea* Aublet (1775).

8412. **Lasianthus** Jack, Trans. Linn. Soc. **14**: 125. 1823 ('1825').
T.: *L. cyanocarpus* Jack (*typ. cons.*).
(H) *Lasianthus* Adanson, Fam. **2**: 398. 1763 prim. [THEAC.].
≡ *Gordonia* Ellis 1771 (*nom. cons.*) (5148).
(=) *Dasus* Loureiro, Fl. Cochinch. 141. 1790.
T.: *D. verticillata* Loureiro.

8430. **Paederia** Linnaeus, Syst. Nat. ed. 12. 189; Mant. 7, 52. Oct 1767.
T.: *P. foetida* Linnaeus.
(≡) *Daun-contu* Adanson, Fam. **2**: 146. 1763 prim.
(=) *Hondbessen* Adanson, Fam. **2**: 158. 1763 prim.

8445. **Nertera** Banks et Solander ex J. Gaertner, Fruct. **1**: 124. 1788 (Dec 1788-Mai 1789).
T.: *N. depressa* J. Gaertner.
(=) *Gomozia* Mutis ex Linnaeus f., Suppl. 17, 129. 1781 sem. 2.
T.: *G. granadensis* Linnaeus f.

8473. **Borreria** G. F. W. Meyer, Prim. Fl. Esseq. 79. 1818 sero.
T.: *B. suaveolens* G. F. W. Meyer (*typ. cons.*).
(H) *Borrera* Acharius, Lich. Univ. 93, 496. 1810 [LICH.].
(=) *Tardavel* Adanson, Fam. **2**: 145. 1763 prim.

post 8473. **Robynsia** Hutchinson in Hutchinson et Dalziel, Fl. W. Trop. Afr. **2**: 108. Mar 1931.
T.: *R. glabrata* Hutchinson.
(H) *Robynsia* Drapiez in Lemaire, Hortic. Univ. **2**: 127, 231. 1841 [AMARYLL.].
T.: *R. geminiflora* Drapiez.

Note: Another homonym: *Robynsia* Martens et Galeotti, Bull. Acad. Bruxelles **10**(2): 193 (1843) [LEGUM.].

VALERIANACEAE

8530. **Fedia** J. Gaertner, Fruct. **2**: 36. Oct 1790.
T.: *F. cornucopiae* (Linnaeus) J. Gaertner (*Valeriana cornucopiae* Linnaeus (*typ. cons.*).
(H) *Fedia* Adanson, Fam. **2**: 152. 1763 prim.
T.: *Valeriana sibirica* Linnaeus.
≡ *Patrinia* A. L. Jussieu 1807 (*nom. cons.*) (8535).

8535. **Patrinia** A. L. Jussieu, Ann. Mus. Hist. Nat. Paris **10**: 311. Oct 1807.
T.: *P. sibirica* (Linnaeus) A. L. Jussieu (*Valeriana sibirica* (Linnaeus) (*typ. cons.*).

Note: *Patrinia* A. L. Jussieu was superfluous on publication, hence illegitimate. The conservation remains necessary notwithstanding the fact that (≡) *Fedia* Adanson, Fam. **2**: 152 (1763), is no longer available because of *Fedia* J. Gaertner 1790 (*nom. cons.*).

DIPSACACEAE

8541. **Cephalaria** H. A. Schrader ex Roemer et Schultes, Syst. **3**: 1, 43. 1818 med.
T.: *C. alpina* (Linnaeus) Roemer et Schultes (*Scabiosa alpina* Linnaeus) (*typ. cons.*).
(–) *Lepicephalus* Lagasca, Gen. Sp. 7. 1816.

Note: *Cephalaria* H. A. Schrader, Ind. Sem. Hort. Gott. 1814: 2 (Dec 1814), is not validly published (*nomen nudum*).

CUCURBITACEAE

8596. **Ecballium** A. Richard, Dict. Class. Hist. Nat. **6**: 19. Sep 1824.
T.: *E. elaterium* (Linnaeus) A. Richard (*Momordica elaterium* Linnaeus).
(≡) *Elaterium* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

Note: *Elaterium* N. J. Jacquin, Enum. Pl. Carib. 9, 31 (Mai 1760), can hardly be treated as different from *Elaterium* P. Miller. Both maintain the usage of the same pre-Linnean name, but Jacquin described a new species under it.

8598. **Citrullus** H. A. Schrader in Ecklon et Zeyher, Enum. 279. Jan 1833.
T.: *C. vulgaris* H. A. Schrader (*Cucurbita citrullus* Linnaeus) (*typ. cons.*).
(≡) *Anguria* P. Miller, Gard. Dict. Abr. ed. 4. 1754.
(=) *Colocynthis* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

Note: Mr. C. Jeffrey, from Kew, has pointed out to us (in litt. 14 Oct 1959) that there is available an earlier epithet for the type-species in *Momordica lanata* Thunberg, Prodr. Fl. Cap. 13 (1794), a taxonomic synonym of *Cucurbita citrullus* Linnaeus. It should also be pointed out that in the present list *Colocynthis* is attributed to Ludwig, Inst. Regn. Veg. ed. 2. 139. 1757; we interpret this as a later application of *Colocynthis* P. Miller, based on the Tournefortian genus.

†8627. **Cayaponia** Silva Manso, Enum. Subst. Braz. 31. 1836.
T.: *C. diffusa* Silva Manso (*typ. cons.*).

Note: Conservation superfluous: (–) *Arkezostis* Rafinesque, New Fl. **4**: 100, was published late in 1838.

8629. **Echinocystis** Torrey et Gray, Fl. N. Am. **1**: 542. Jun 1840.
T.: *E. lobata* (A. Michaux) Torrey et A. Gray (*Sicyos lobata* A. Michaux).
(=) *Micrampelis* Rafinesque, Med. Repos. N.Y. ser. 2. **5**: 350. 1808.
T.: *M. echinata* Rafinesque.

Note: Rafinesque proposed *Micrampelis echinata* as a new genus and species, differing from *Momordica*. Although he gives no reference to previous literature, it is probable that this *M. echinata* was based on *Momordica echinata* Muhlenberg ex Willdenow, Sp. Pl. **4**: 605 (1805), under which in turn *Sicyos lobata* A. Michaux, Fl. Bor.-Am. **2**: 217 (1803), was cited. If this assumption be accepted, *Micrampelis* Rafinesque, not being based on a new species, was not validly published, and conservation of *Echinochystis* Torrey et Gray is superfluous. However, it is probably impossible to establish Rafinesque's intention, and we therefore accept *Micrampelis* as validly published.

†8636. **Sechium** P. Browne, Hist. Jamaica 355. 1756.
T.: *S. edule* (N. J. Jacquin) Swartz (*Sicyos edulis* N. J. Jacquin) (*typ. cons.*).

Note: Conservation superfluous: there are no earlier competing names.

CAMPANULACEAE

8668. **Wahlenbergia** H. A. Schrader ex Roth, Nov. Pl. Sp. 399. 1821 sem. 1.
T.: *W. elongata* (Willdenow) Schrader ex Roth, nom. illeg. [*Campanula capensis* Linnaeus, *W. capensis* (Linnaeus) A. Decandolle].
(=) *Cervicina* Delile, Fl. Egypte 7. 1813 sero.
T.: *C. campanuloides* Delile.

Note: The publication of *Wahlenbergia* by Schrader in the Cat. Hort. Goett. **1814**: 3 (Dec 1814) is not valid (*nomen nudum*).

†8680. **Sphenoclea** J. Gaertner, Fruct. **1**: 113. 1788 (Dec 1788-Mai 1789).
T.: *S. zeylanica* J. Gaertner.

Note: Conservation superfluous: *Pongati* Adanson, Hist. Nat. Sénég. (1757), is not validly published; it is merely mentioned incidentally and there is a simple reference to H.M. (Pongati). Furthermore this is evidently a unitary designation of a species and perhaps even only a vernacular name. The name has no standing. (≡) *Pongatium* A. L. Jussieu, Gen. 423, 453 (1789 sem. 2), is a later name and an avowed synonym of *Sphenoclea.*

8706. **Downingia** Torrey, Pacif. Railr. Rep. **4**(1[4]): 116. 1857.
T.: *D. elegans* (Lindley) Torrey (*Clintonia elegans* Lindley).
(≡) *Bolelia* Rafinesque, Atl. Journ. 120. 1832.

Note 1: Torrey published *Downingia* as an avowed substitute for *Clintonia* Lindley, Bot. Reg. *t. 1241* (1829), which was not available because of *Clintonia* Rafinesque, Am. Mon. Mag. Crit. Rev. **2**: 266 (1818). However, Torrey cited only Bot. Reg. *t. 1909*, which illustrates *Clintonia pulchella* Lindley. Lindley here refers to his publication of the genus in 1829, so that Torrey's "*Downingia elegans*" may be a valid publication of the genus by this indirect reference to a previously published description. The type, however, should be that of Lindley's genus, not the species cited by Torrey (though this was included in the Code); the conservation was not intended to change the type.

Note 2: The first legitimate substitute name for *Clintonia* Douglas ex Lindley (1829), was *Bolelia* Rafinesque (1832), listed above. *Clintonia* itself should not be listed here because it is not available. Other later substitute names are *Gynampsis* Rafinesque, Herb. Raf. 48, 52 (1833), and *Wittea* Kunth, Abh. Akad. Berlin Physik **1848**: 32 (1850), both illegitimate.

GOODENIACEAE

†8716. **Scaevola** Linnaeus, Mant. **2**: 145. Oct 1771.
T.: *S. lobelia* Murray (Syst. Veg. 178. 1774), nom. illeg. [*Lobelia plumierii* Linnaeus, *S. plumierii* (Linnaeus) Vahl] (*typ. cons.*).

Note: Conservation superfluous: (=) *Lobelia* P. Miller, Gard. Dict. Abr. ed. 4 (1754), though based on the same reference to Plumier as *Lobelia plumerii*, is illegitimate because of *Lobelia* Linnaeus, Sp. Pl. 929; Gen. Pl. ed. 5. 401 (1753, 1754).

8724. **Stylidium** Swartz ex Willdenow, Sp. Pl. **4**: 7, 146. 1805.
T.: *S. graminifolium* Swartz ex Willdenow (*typ. cons.*).
(H) *Stylidium* Loureiro, Fl. Cochinch. 220. 1790 [ALANG.].
T.: *S. chinense* Loureiro.
(=) *Candollea* Labillardière, Ann. Mus. Hist. Nat. Paris **6**: 453. 1805 sem. 2.

COMPOSITAE (ASTERACEAE)

8751. **Vernonia** Schreber, Gen. **2**: 541. 1791 sem. 1.
T.: *V. noveboracensis* (Linnaeus) Willdenow, Sp. Pl. **3**: 1632. 1803. (*Serratula noveboracensis* Linnaeus) (*typ. cons.*).
(=) *Behen* J. Hill, Veg. Syst. **4**: 41. 1762.

Note: Conservation superfluous according to T. A. Sprague (Journ. Bot. **62**: 145. 1924) who says that *Behen* is a distinct genus which has nothing to do with *Vernonia*.

8761. **Piptolepis** K. H. Schultz, Pollichia **20-21**: 380. 1863.
T.: *P. ericoides* (Lamarck) K. H. Schultz (*Conyza ericoides* Lamarck).
(H) *Piptolepis* Bentham, Pl. Hartw. 29. Feb 1840 [OLEAC.].
T.: *P. phillyreoides* Bentham.

8772. **Soaresia** K. H. Schultz, Pollichia **20-21**: 376. 1863.
T.: *S. velutina* K. H. Schultz.
(H) *Soaresia* Allemão, Revista Braz. **1**: 210. Oct 1857 [MORAC.].
T.: *S. nitida* Allemão.

8808. **Brachyandra** R. Philippi, Fl. Atac. 34. 1860.
T.: *B. macrogyne* R. Philippi.
(H) *Brachyandra* Naudin, Ann. Sci. Nat. Bot. ser. 3. **2**: 143. Sep 1844 [MELAST.] (etiam vide 5632).
T.: *B. perpusilla* Naudin.

†8818. **Mikania** Willdenow, Sp. Pl. **3**: 1742. 1803 prim.-med.
T.: *M. scandens* (Linnaeus) Willdenow (*Eupatorium scandens* Linnaeus) (*typ. cons.*).

Note: Conservation superfluous: (=) *Carelia* Cavanilles, Anal. Ci. Nat. **6**: 317 (Oct 1803), is not available because of *Carelia* Boehmer in Ludwig, Def. 154 (1760); it is doubtful whether it was intended as a new genus.

8823. **Brickellia** S. Elliott, Sketch Bot. S.C. & Ga. **2**: 290. 1822(?) ('1824').
T.: *B. cordifolia* S. Elliott.
(H) *Brickellia* Rafinesque, Med. Repos. N.Y. ser. 2. **5**: 353. Jun 1808 [POLEMON.].
≡ *Ipomopsis* A. Michaux 1803.
(=) *Coleosanthus* Cassini, Bull. Soc. Philom. Paris **1817**: 67. Apr 1817.
T.: *C. cavanillesii* Cassini.

8826. **Liatris** J. Gaertner ex Schreber, Gen. **2**: 542. 1791 (sem. 1).
T.: *L. squarrosa* (Linnaeus) A. Michaux (Fl. Bor.-Am. **2**: 92. 1803) (*Serratula squarrosa* Linnaeus (*typ. cons.*).
(=) *Laciniaria* J. Hill, Veg. Syst. **4**: 49. 1762.

8840. **Bradburia** Torrey et Gray, Fl. N. Am. **2**: 250. Apr 1842.
T.: *B. hirtella* Torrey et Gray.
(H) *Bradburya* Rafinesque, Fl. Ludov. 104. 1817 [LEGUM.] (etiam vide 3858).

8843. **Chiliophyllum** R. Philippi, Linnaea **33**: 132. 1864.
T.: *C. densifolium* R. Philippi.

(H) *Chiliophyllum* A. P. Decandolle, Prodr. **5**: 554. Oct 1833 [COMPOS.].
T.: *C. globosum* (Gomez Ortega) A. P. Decandolle (*Anthemis globosa* Gomez Ortega).

8844. **Chrysopsis** (Nuttall) S. Elliott, Sketch Bot. S.C. & Ga. **2**: 333. 1823(?) ('1824').
T.: *C. mariana* (Linnaeus) S. Elliott (*Inula mariana* Linnaeus) (*typ. cons.*).

(≡) *Diplogon* Rafinesque, Am. Mon. Mag. Crit. Rev. **4**: 195. Jan 1819.

8852. **Haplopappus** Cassini, Dict. Sci. Nat. **56**: 168. Sep 1828 ('*Aplopappus*'); corr. Endlicher, Gen. Pl. 385. Dec 1837.
T.: *H. glutinosus* Cassini ('*Aplopappus*').

(V) *Aplopappus* Cassini, Dict. Sci. Nat. **56**: 168. Sep 1828.
(=) *Hoorebekia* Cornelissen in Mussche, Hort. Gand. (13), 120. 1817.
T.: *H. chiloensis* Cornelissen.

8855. **Bigelowia** A. P. Decandolle, Prodr. **5**: 329. Oct 1836.
T.: *B. nudata* (A. Michaux) A. P. Decandolle (*Chrysocoma nudata* A. Michaux) (*typ. cons.*).

(H) *Bigelowia* Rafinesque, Am. Mag. Crit. Rev. **1**: 442. Oct 1817 [CARYOPH.].
T.: *B. montana* Rafinesque.

Note 1: Other homonyms: *Bigelovia* C. Sprengel, Neue Entd. **2**: 150 (1821) [FLACOURT.], *Bigelovia* J. E. Smith in Rees, Cyc. **39** (1819) [OLEAC.], and *Bigelovia* C. Sprengel, Syst. **1**: 366, 404 (1824) [RUBIAC.]. *Bigelovia* A. P. Decandolle ex Gingins in A. P. Decandolle, Prodr. **1**: 290 (1824), is a *nomen nudum*, being only mentioned in synonymy.

Note 2: (=) *Chondrophora* Rafinesque, New Fl. **4**: 79 (1838), is a *nomen nudum*.

8862. **Pteronia** Linnaeus, Sp. Pl. ed. 2. 1176. Jul 1763.
T.: *P. camphorata* Linnaeus.

(≡) *Pterophorus* Boehmer in Ludwig, Def. Gen. Pl. 165. 1760.

8887. **Amellus** Linnaeus, Syst. Nat. ed. 10. 1225, 1377. Mai-Jun 1759.
T.: *A. lychnites* Linnaeus (*typ. cons.*).

(H) *Amellus* P. Browne, Hist. Jamaica 317. 1756 [COMPOS.].
T.: *Santolina amellus* Linnaeus.

8898. **Callistephus** Cassini, Dict. Sci. Nat. **37**: 491. Dec 1825.
T.: *C. chinensis* (Linnaeus) C. G. Nees, Gen. Sp. Ast. 222. 1833 (*Aster chinensis* Linnaeus).

(≡) *Callistemma* Cassini, Bull. Soc. Philom. Paris **1817**: 32. Feb 1817.

8909. **Celmisia** Cassini, Dict. Sci. Nat. **37**: 259. Dec 1825.
T.: *C. longifolia* Cassini (*typ. cons.*).

(H) *Celmisia* Cassini, Bull. Soc. Philom. Paris **1817**: 32. Feb 1817 [COMPOS.].
T.: *C. rotundifolia* Cassini (Dict. Sci. Nat. **7**: 356. Mai 1817).

8916. **Olearia** Moench, Meth. Suppl. 254. 1802.
T.: *O. dentata* Moench, nom. illeg. [*Aster tomentosus* J. C. Wendland, *O. tomentosus* (J. C. Wendland) A. P. Decandolle].

(=) *Shawia* J. R. et G. Forster, Char. Gen. Pl. 95. 1776.
T.: *S. paniculata* J. R. et G. Forster.

8918. **Sommerfeltia** Lessing, Syn. Gen. Comp. 189. 1832.
T.: *S. spinulosa* (C. Sprengel) Lessing (*Conyza spinulosa* C. Sprengel).

(H) *Sommerfeltia* Flörke in Sommerfelt, Norske Vid. Skr. **2**(2): 60. 1827 [LICH.].
T.: *S. arctica* Flörke.

Note: Another homonym: *Sommerfeldtia* H. C. F. Schumacher, Beskr. Guin. Pl. 331 (1828) [LEGUM.].

(to be continued)

NEWS AND NOTES

ORIGINAL GENERIC DESCRIPTION AND TYPIFICATION OF THE GENUS 8668 WAHLENBERGIA SCHRAD. EX ROTH (1821) (CAMPANULACEAE)

For the elaboration of the Campanulaceae in the Flora Malesiana the first valid publication of Wahlenbergia and its typification had to be verified.

In the Code it is included among the nomina generica conservanda as dating from Schrader, "Catal. Hort. Goett. 1814", and conserved against Cervicina Del. 1830, which seemed a superfluous conservation.

The compilers of Index Kewensis obviously had Schrader's seed list not at their disposal and derived their data from Don or Pfeiffer.

Through the intermediary of Prof. Firbas in Göttingen, Dr Hans-Jurgen Beug, Kustos, kindly sent us the index seminum from 1814. It appears that Schrader entered in this list on page 3 three species under the generic name Wahlenbergia, viz "W. grandiflora Schrad. (Campan. grandiflora L.), W. elongata Schrad. (Campan. elongata Hort.), W. pendula Schrad. (Campan. lobelioides L. fil.)".

Both the generic name Wahlenbergia and the specific names under Wahlenbergia are nomina nuda, and as the genus Wahlenbergia had not been validly published, the three combinations are also invalid and have no status under the Rules.

Further investigation led to Roemer & Schultes, Syst. Veg. 5 (1819), who did not recognize the genus Wahlenbergia and inserted Schrader's species names as synonyms under their respective status in Campanula.

Roth, Nov. Pl. Sp. (1821) 399, however, gave a satisfactory generic description and he is obviously the author from which the generic name should date. The species he described elaborately was W. elongata Schrad. ex Roth, l.c., which is an illegitimate synonym of W. capensis (L.) DC.

The second author giving a valid generic description was D. Don, Prod. Fl. Nepal. (1825) 156; he described also a species W. ovata D. Don, l.c., an Indian plant which has remained obsolete to the present day. De Candolle, in his monograph (1830), arranged it under doubtful plants, probably not campanulaceous. G. Don, Gard. Dict. 3 (1834) 743, followed De Candolle and called it a dubious species. It is not mentioned in the Flora of British India where it should have been evaluated. It is also omitted from De Candolle's Prodromus and is waiting to be clarified.

Schrader himself gave a valid publication of his Wahlenbergia only in Blumenbachia, etc. (1827), with one species, W. repens Schrad. In the same year Reichenbach also validly published the genus Wahlenbergia in his Icon. Rar. cent. 5, part 8 (1827) 16, t. 480, with the single species W. hederacea (L.) Rchb.

In the Code Wahlenbergia is conserved against Cervicina Delile, Fl. Egypte 7. 1813 (sphalma 1830), which appears to be useful and should remain so.

From the above it appears that the citation in the list of Nomina generica conservanda should be improved and it is proposed to read as follows:

Nom. Gen. Cons.

8668. Wahlenbergia Schrad. ex Roth, Nov. Pl. Sp. 399. 1821.
T.: W. elongata Schrad. ex Roth, l. c.
[W. capensis (L.) A. DC.]

Nom. Gen. Rejic.

Cervicina Del. Fl. Egypte 7. 1813.

C. G. G. J. VAN STEENIS.

AMERICAN SOCIETY OF PLANT TAXONOMISTS

Officers of the American Society of Plant Taxonomists for 1960 are as follows: Lyman Benson (Pomona College), president; C. Ritchie Bell (University of North Carolina), secretary; Richard W. Pohl (Iowa State University), treasurer; Mildred E. Mathias (U.C.L.A.), chairman of the council; Charles B. Heiser (Indiana University), new council member; David D. Keck (National Science Foundation), retiring council member.

A paper entitled "Cytological evidence on the relationship of *Krigia* and *Serinia*," by Kenton L. Chambers, of Yale University, received the ASPT Cooley Award of $ 100 for the best taxonomy paper presented at the annual meeting of the society. A paper by Julian A. Miller, J. E. Giddens, and A. A. Foster, "A survey of the fungi of forest and cultivated soils of Georgia" [*Mycologia* 49: 779-808 (Nov.-Dec. 1957, but actually published in March 1958)], was selected for the ASPT $ 500 Cooley Award for the best taxonomic paper, concerning southeastern plants, published in 1958.

The 1960 ASPT meeting will be held in August, with the American Institute of Biological Sciences, at Oklahoma State University.

C. Ritchie Bell, Secretary

NOMENCLATURE COMMITTEES

The following changes have to be made in the list of committees published in Taxon 8: 253. 1959:

1. *General Committee:* Mr. C. E. Hubbard declined the appointment.
2. *Committee for Spermatophyta:* M. G. Aymonin declined the appointment.
3. *Committee for Pteridophyta:* Dr C. V. Morton declined the appointment.
4. *Committee for Bryophyta:* Mr. P. W. Richards and Dr H. Reimers declined the appointment.
5. *Committee for Fungi and Lichens:* Dr G. H. Cunningham declined the appointment.
6. *Committee for Algae:* The Committee has co-opted C. K. Cheng (China), T. Tanaka (Japan) and A. D. Zinova (USSR).

10. *Committee for Palaeobotanical Nomenclature:* Mme S. Leclerq and P. Corsin declined the appointment.
Special Committee on Neotypes: G. Aymonin declined the appointment.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanisch Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Rumania

Flora Republicii Populare Romîne ed. by T. Savolescu. Vol. VII. (*Plumbaginaceae - Scrophulariaceae*). Publ. by the Academia Republicii Populare Romîne, 1960. (659 pp., 108 plates; price lei 37.50).

Flora of North Africa

R. Maire †: Flore de l'Afrique du Nord. Vol. VI. *Monocotyledonae: Liliales: Amaryllidaceae, Dioscoreaceae, Iridaceae; Scitaminales; Gynandrales.* Ed. Lechevalier, Paris, 1959. (397 pp., fig. 924-1121; with supplement to the volumes previously published. Price fr 5000.).

Flora of the Pacific States

L. Abrams & R. S. Ferris: Illustrated Flora of the Pacific States. Vol. IV. *Bignoniaceae* to *Compositae*, by R. S. Ferris. Stanford Univ. Press, Stanford, Cal., 1960. (732 pp., figs. 4945-6069; with family keys and general index. Price $ 17.50).

Orchids of British Columbia

A. F. Szczawinski: The Orchids of British Columbia. Publ. as Handbook No. 16 of the British Columbia Provincial Museum, Victoria, B.C., 1959. (124 pp., numerous illustrations and maps; with keys to genera and species, descriptions, and distributional data. Price $ 0.50).

Legumes of Texas

B. L. Turner: The legumes of Texas. Univ. of Texas Press, Austin, Texas, 1960. (284 pp., 178 distributional maps; with keys to 360 species in 59 genera, habitat and agronomic notes, chromosome numbers for ca. 200 taxa, and original treatment of the floristic regions of the state. Price $ 6.00).

Ferns of Iowa

T. S. Cooperrider: The ferns and other Pteridophytes of Iowa. Dept. of Publications, State Univ. of Iowa, Iowa City, Iowa, 1959. (66 pp., 82 ill., 53 maps; price $ 1.00).

Ferns of Japan

M. Tagawa: Coloured Illustrations of the Japanese Pteridophyta. Chome Uehonmachi, Higashi-Ku, Osaka, Japan, 1959. (270 pp., 72 plates of coloured illustrations, colour photographs on covers; with keys to genera and species and descriptions; Japanese, with scientific names. All native taxa are described and illustrated. With appendix: Index Pteridophytarum Japonicarum, with complete synonymy and brief indication of distribution. Price?).

Flora Malesiana

Flora Malesiana Series II — *Pteridophyta.* Vol. I pt. 1. R. E. Holttum: Introductory note; list of Malaysian Pteridophyte genera; morphology of ferns; general keys to families and genera of *Pteropsida;* bibliography of books and papers dealing with the taxonomy of Malaysian ferns publ. after 1933; *Gleicheniaceae;*

Schizaeaceae. A. H. G. Alston †: *Isoëtaceae*. P. Noordhoff, Groningen, 1960. (xxiii + 64 pp., 32 ill.; price Dfl. 10.—).

Plants of Tonga

T. G. Yuncker: Plants of Tonga. Publ. as B.P. Bishop Museum Bulletin No. 220, Honolulu, 1959. (283 pp., 17 figs.; an enumeration of the author's collections, including Fungi, Lichens, Bryophytes, Pteridophytes, and Flowering Plants; with general introduction, field notes, and distributional data).

Ustilaginales of Sweden

B. Lindberg †: *Ustilaginales* of Sweden (exclusive of the Cintractias on *Caricoideae*). Publ. as Symb. Bot. Upsal. XVI: 2, Uppsala, 1959. (175 pp.; with keys to genera and species, concise descriptions, enumerations of host-plants and collections, notes on taxonomy and nomenclature, and index according to host-plants.).

Cryptogams of Ellesmere Land

R. M. Schuster, W. C. Steere & J. W. Thomson: The terrestrial Cryptogams of northern Ellesmere Land. Publ. as National Museum of Canada Bull. No. 164, Ottawa, 1959. (132 pp., 6 photographs; an enumeration, with general introduction, field notes, distributional and phytosociological data; includes Bryophytes and Lichens. Price $ 2.00).

Grasses of Burma, Ceylon, India and Pakistan

N. L. Bor: The Grasses of Burma, Ceylon, India and Pakistan (excluding *Bambuseae*). Publ. by the Pergamon Press, London, in the International Series of Monographs in Pure and Applied Biology (to appear shortly). (ca. 550 pp., numerous illustrations; with chapters on general morphology, dispersal, uses, and taxonomic treatment. Price 80 s.).

Monograph of Micropeltaceae

A. Chaves Batista: Monografia dos fungos Micropeltaceae. Publ. as Publ. No. 56 of the Instituto de Micologia, Univ. do Recife, Recife, Brazil, 1959. (519 pp., 228 figs.; with keys to genera and species, descriptions, data on host-plants, drawings and photographs, list of genera and species and host-plants).

The genus Datura

A. G. Avery, S. Satina & J. Rietsema: Blakeslee: The genus *Datura*. Publ. as No. 20 of Chronica Botanica by the Ronald Press Co., New York, 1959. (xli + 289 pp., 67 figs.; with chapters dealing with bibliography, history, taxonomy, alkaloids, cytology, ploidy, genetics, development, etc. Price?).

TYPE PROTEA LEMAIREI
(Request)

Dr. J. S. Beard, 77 Durban Road, Pietermaritzburg, Natal, South Africa, would appreciate our help in locating a syntype of *Protea lemairei* de Wild., Etudes Fl. Katanga (Ann. Mus. Congo Belge ser 4. 1) 30. 1902 collected by Lemaire s.n. in Nyasaland, plateau between Lakes Nyasa and Tanganyika, date unknown.

MONOGRAPH OF THE AMARYLLIDACEAE IN PREPARATION

The undersigned has been specializing on the *Amaryllidaceae* (sensu Hutchinson, 1934; 1959) for many years and is now preparing a monograph on the subject. He is now rechecking the species on the basis of available herbarium specimens on which the final detailed descriptions and their geographical distribution are to be based. The monograph is to be published in several years. Herbaria and individuals having duplicates of the *Amaryllidaceae* that can be spared are requested to donate these so that they may be utilized in the project, cited in the monograph, and placed in the Traub Herbarium for permanent record. In this way the various countries will be adequately represented under geographical distribution of the species in the monograph. Thanks are hereby expressed to the many who have already donated duplicates, or have sent specimens on loan.

Specimens should be sent to the undersigned at Traub Herbarium, 5804 Camino de la Costa, La Jolla, California, U.S.A.

Hamilton P. Traub

REQUEST

Keller, G. Schlechter, R., u. R. v. Soó. Monographie und Iconographie der Orchideen Europas und des Mittelmeergebietes. Bd. II und III ((auch einzelne Lieferungen) Sonderbeiheft A von Repertorium Specierum nov. regni veget.).

Biete im Tausch

Band IV und Band V (auch einzelne Lieferungen und besonders die meist fehlende *Schlußlieferung mit Index zu Band III bis V mit den Tafeln 601-640.*

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SIDNEY FAY BLAKE

(1892-1959)

Doris Holmes Blake (Arlington, Va.)

Although often mistaken for an Englishman, Sidney Fay Blake was born on August 31, 1892 in Massachusetts of old New England stock. His father, a small town grocer, was the son of Edmund Blake, a well-known Boston dentist of his day, and Caroline Fay. His mother, Harriot Elsie Southworth, was a direct descendant of Gov. William Bradford's second wife, Lady Alice Southworth, who brought her two young boys by her former marriage to the Plymouth colony.

Blake, the youngest of three sons, was born and grew up in Stoughton, which is 18 miles south of Boston. In that community he had the reputation of being one of the brightest ever to go through the public schools. His interest in natural history began early with the study of birds, an interest that lasted throughout his life. Later, in High School, he came under the influence of Prof. R. G. Leavitt, a botanist who lived in the neighborhood and worked on experiments in Oakes Ames' greenhouse in the adjoining North Easton, and taught at Harvard. Leavitt held a little class for a group of local people interested in botany one evening a week and Blake was one of them.

By the time he entered Harvard it was with the purpose of becoming a botanist. As his was the last class under President Eliot to be given free choice in subjects, he took all the botany courses given, as well as many in zoology. He took French under Irving Babbitt, who, perceiving Blake's quality, did his best to get him to major in French. Blake had a flair for speaking French and an understanding of the French people. Blake's botany teachers were Thaxter, Jeffrey, Osterhaut, and the two teachers who meant the most to him, B. L. Robinson and M. L. Fernald. He took his A.B. in 3 years, and the following year (1913) his A.M., publishing his first long paper (50 pages) on *Encelia*. Previously he had published 13 other botanical papers as well as several on birds. He was given the honorary John Harvard fellowship, elected to the Phi Beta Kappa, and for two years held a Sheldon travelling fellowship. In the summer of 1913 he was arranging plant collections at the Smithsonian, later he went on a collecting trip for Fernald to New Brunswick, and in December he sailed for Europe. Except for a short period on the Continent, visiting herbaria in Paris, Geneva and Berlin, a trip that ended in August 1914 in Berlin at the outbreak of the First World War, he spent his entire time at the British Museum (Natural History). He was publishing constantly, and one year had a paper in every issue of the *Journal of Botany*. He vied with Fernald in publishing too, in nearly every issue of *Rhodora*. In February 1916 he returned to Cambridge, and received his Ph.D. a year later, publishing his long (205 pages) doctor's thesis on *Viguiera*. For a while he was an assistant at the Gray Herbarium.

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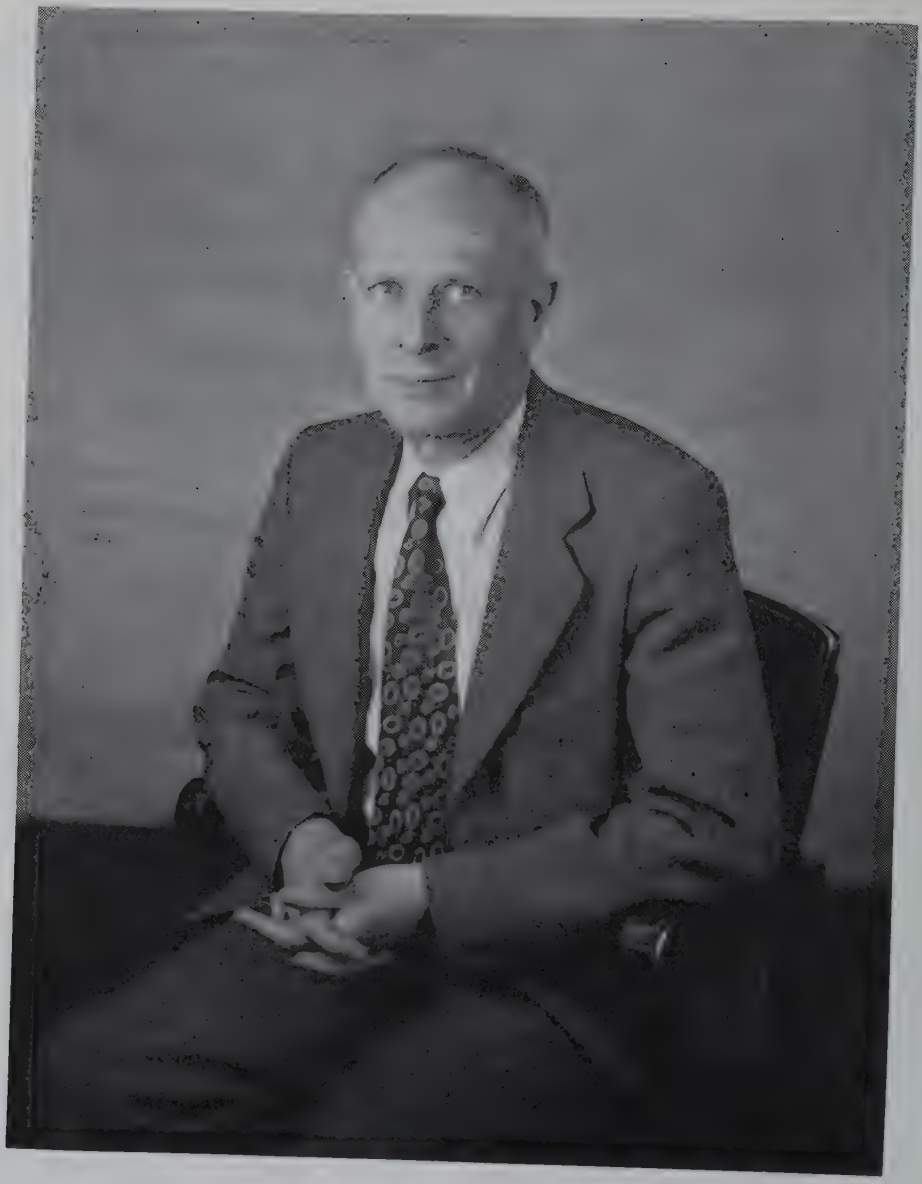

He was offered a position at the Smithsonian at $1200, and another at the Department of Agriculture under Frederick Coville in the Division of Botany at $1800. It is a pity he could not have taken the Smithsonian position but the small salary was inadequate. Blake, after working his way through college, now had to support his parents and pay their debts. So, in December 1917, he resigned himself to preparing the Standardized Plant names, a job he hated, and did his research in his spare time. The tragedy of Blake's whole life was that though one of the keenest, best-trained botanists, he was always to be subjected to the petty drudgery of office work. One of his colleagues has said that he did more drudgery than any other botanist he ever knew. But he would not accept an administrative job and he always

worked under administrators who had no use for pure research, so he had to do his real scientific work in his spare time. Even so handicapped, his scientific output was great and the number of his publications surpasses that of many who were burdened with less routine. In large measure his early death may be attributed to the strain and long hours of his working days.

On May 4, 1918, the same date, he liked to think, on which Asa Gray was married, he married Doris M. Holmes, a distant cousin and school-mate of his from primary school days, who shared his interest in natural history, and who is an entomologist. One child, Doris Sidney, was born of this marriage. During this same summer of 1918, in his spare time, he finished the Polygalaceae for the *North American Flora.*

In 1919 he made a short collecting trip with the late Henri Pittier and others to Guatemala and Honduras. In 1925 Blake had saved enough money to spend four months in Europe working at the Herbaria in London, Paris and Geneva. He made many photographs of types then. On his return, Prof. Leroy Abrams of Stanford University asked him to work up the Compositae for the illustrated flora of the Pacific states that he was publishing, and arranged for him to teach at summer school there in the summer of 1927. Although Blake did a great deal on this flora, he was never able to finish it entirely due to changing conditions in his office and the pressure of other tasks. He first became interested in working on his geographical guide to the floras of the world in connection with work done by a librarian in the Department of Agriculture library, Miss Alice C. Atwood. Together they finished the first volume, which was published in 1942. She did not live to do much on the second volume, and he carried on the work alone, mostly in his spare time. He had finished correcting the galley proof of this, his longest work, at the time of his sudden death from a heart attack on December 31, 1959, while at his office in Beltsville, Maryland.

Following in the footsteps of his Harvard predecessors, Asa Gray and B. L. Robinson, Blake became the leading authority on Compositae. He published over 300 botanical papers mostly on Compositae, besides his *Geographical Guide to the Floras of the World*, and in addition published frequent bird notes, one paper on the spotted turtle, and another on fossil shells.

All of his publications are notable for the meticulous care with which they were prepared. The exceptionally high quality of his research and soundness of his judgment are attested by the rarity of any changes in the category of his taxa proposed by subsequent authors working with the same groups. Fernald once thought he detected an error in one of Blake's nomenclatorial conclusions, so in publishing his supposed correction referred to him as "the usually careful Blake," but in the end the error proved to be Fernald's. Like his late friend, C. A. Weatherby of the Gray Herbarium, Blake was recognized as one of the few masters of the more intricate phases of botanical nomenclature and his cheerfully given help in this field was constantly sought by taxonomists everywhere. His knowledge of the vascular plants as a whole, quite apart from his intimate acquaintance with the Compositae, was phenomenal, so that botanists were wont to bring their most difficult problems in identification to him. No doubt it was considerations such as these that led a leading systematist to comment recently that he considered Blake the dean of American taxonomists. Early in his career he was referred to by the captious Edward Lee Greene as "the only educated botanist" in the country. But even more impressive than his erudition was his signal humility, so that those who knew him well felt that outstanding though he was as a scientist, he was still greater as a man. Plants named in his honor number over a score, including the genus *Neoblakea* (Rubiaceae). *

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* This paragraph was written by F. J. Hermann (Ed.).

His intense vital spirit was marked even as a child. In the lower grades of the public schools, his teachers always put him either in the front row or at a desk beside their own in an endeavour to keep him occupied and out of mischief. As he grew older, his keen mental activity became focussed on natural history. As a high school boy he was up before dawn on spring mornings tramping through the woods and fields to watch birds, and later he spent long days on collecting trips about the countryside on his bicycle for plants. His power of observation was always remarkable. Nothing escaped his notice, not the lisp of a bird nor the tiniest obscure flower. When a boy, studying birds, he collected birds' eggs and made skins of birds, usually ones that he picked up dead along the road. From early years he kept a journal of bird notes which is full of interesting observations. His plant collection began in these early days, and grew steadily all his life. It amounted to well over 35,000 sheets, mostly Compositae. This collection, together with his scientific books, has been acquired by the Texas Research Foundation.

During the 1930s, after a hurricane that brought down much of the cliffs along Chesapeake Bay, Blake became interested in fossil shells, and collected them from Maine to Alabama. He published a paper on the Pleistocene shells of Wailes Bluff, Maryland. A palaeontologist has said that his collection of fossil shells is the largest private one in the East.

His interest in biology in general is shown by the fact that he was recording secretary of the Biological Society of Washington from the year he was elected in 1922 to his death. He was a member of the Biologists Field Club of Plummers Island. In 1943 he was elected President of the American Society of Plant Taxonomists. In 1950, as U.S. Department of Agriculture delegate, he attended the botanical congress at Stockholm and spent several months working in the herbaria and libraries in Stockholm, Paris, Leiden, Utrecht and London. In 1956 he was awarded the certificate of merit by the Botanical Society of America, one of the fifty botanists to be so honored.

When his heart began to trouble him and he could no longer go on collecting trips, he developed a hobby of writing Sherlock Holmes research articles for the *Baker Street Journal*, "an irregular quarterly of Sherlockiana" published by the Baker Street Irregulars. He was at his best in writing on these subjects, where his whimsical humor played so great a part.

One other facet of his nature was his love of poetry. Not only would he recite entire poems such as the "City of Dreadful Night" or the "Rubaiyat" to beguile him on long automobile trips, but he was himself something of a poet. He never published anything except his humorous skits (Professor Thaxter used one of them on Laboulbeniaceae in his Harvard classes), but he left a notebook full of poems, many of them quite serious with something of the wistful appeal of a Shropshire Lad.

To many who did not know him well, Blake appeared somewhat reserved and aloof, but to his intimates he was a charming witty companion full of fun and delicate humor. He was held in high esteem by his professional associates, not only in Washington, but by men around the world with whom he came in contact personally or through correspondence. One of them wrote of him that he had never heard a mean word said against him by anyone. In his home life he was full of quiet enjoyment of his garden and the birds he fed, and always busy with his books and specimens. He hated false pretensions and was himself a living example of simple living without ostentation. With his keen critical ability he analyzed everything and everyone quickly, yet everyone who knew him realized his gentleness, his fineness of character, his conscientiousness and utter honesty in all his dealings. No one held up before him more constantly Harvard's emblem "Veritas" than he.

BOTANICAL PUBLICATIONS
Sidney F. Blake

1910

A new Lycopodium from New Hampshire. Fern Bull. 18: 9-10.
Botrychium obliquum var. oneidense in eastern Massachusetts. Rhodora 12: 80.
Note on Juniperus horizontalis and J. virginiana. Rhodora 12: 218.

1911

A Scirpus new to New Hampshire. Rhodora 13: 55.
Pteridophyte notes from eastern Massachusetts. Rhodora 13: 101-103.

1912

The forms of Peltandra virginica. Rhodora 14: 102-106.
(Joint author). Reports on the flora of the Boston District, XV-XVIII. Rhodora 14: 107-113. 1912; 15: 54-59, 122-132, 144-151. 1913.
Sisymbrium officinale in Three States. Rhodora 14: 190-192.

1913

A second local record for Rynchospora macrostachya Torr. Rhodora 15: 19.
Forms of Ophioglossum vulgatum in Eastern North America. Rhodora 15: 86-88.
Two records of Panicum calliphyllum Ashe. Rhodora 15: 99-100.
Six weeks' botanizing in Vermont — I. Notes on the plants of the Burlington region. Rhodora 15: 153-168.
A redisposition of the species heretofore referred to Leptosyne. Proc. Am. Acad. 49: 333-346.
A revision of Encelia and some Related Genera. Proc. Am. Acad. 49: 346-396.
Gymnolomia acuminata, Flourensia retinophylla, n. spp. In B. L. Robinson, Proc. Am. Acad. 49: 505-506.
Six weeks' botanizing in Vermont — II. Additional Notes on Plants near Burlington. Rhodora 15: 200-201.

1914

Six weeks' botanizing in Vermont — III. Notes on the Plants of Swanton and Vicinity. Rhodora 17: 38-41.
A new Chimaphila from San Domingo. Journ. Bot. 52: 169.
The earliest name of the snowberry. Rhodora 16: 117-119.
A new Cochlearia from Newfoundland. Rhodora 16: 135-136.
Notes on the ferns of the Champlain Valley. Am. Fern Journ. 4: 116-119.

1915

Zexmenia costaricensis Benth. Journ. Bot. 53: 13-14.
Two Verbesinas. Journ. Bot. 53: 56-58.
Moneses uniflora var. reticulata. Rhodora 17: 28-29.
Vaccinium uliginosum var. pubescens. Journ. Bot. 53: 90-91.
Two new Mexican Amaranths. Journ. Bot. 53: 103-104.
Notes on the genus Sabatia. Rhodora 17: 50-57.
An Atriplex new to North America. Rhodora 17: 83-86.
Betula glandulosa Michx. var. sibirica (Ledeb.) n. comb. Rhodora 17: 87.
Three new Perymeniums. Journ. Bot. 53: 135-137.
Steiractinia, a new genus of Compositae. Journ. Bot. 53: 153-158.
Trichospira verticillata (L.) Blake, N. comb. Torreya 15: 106.
A revision of Salmea and some allied genera. Journ. Bot. 53: 193-202; 53: 225-235.
Some neglected names in Walter's Flora Caroliniana. Rhodora 17: 129-137.
Two new Hymenostephiums. Journ. Bot. 53: 268-269.
A new Vaccinium from Costa Rica. Journ. Bot. 53: 271-272.
Stenocarpha Blake, n. Genus. In Decades Kewenses (no. 858). Kew Bull. 1915: 348-349.
Two new Zexmenias. Journ. Bot. 53: 306-307.
A new form of Polygala polygama. Rhodora 17: 201-202.
Four new Heterospermas. Journ. Bot. 53: 322-324.
Correct name for Atriplex arenaria Woods. Journ. Bot. 53: 355-356.

1916

Compositae new and transferred, chiefly Mexican. Proc. Am. Acad. 51: 515-526.
Limonium in North America and Mexico. Rhodora 18: 53-66.
Pappobelus macranthus, Blake. Hook. Icones Plant. 31: pl. 3057.
Schizoptera peduncularis, Blake. Hook. Icones Plant. 31: pl. 3058.
A revision of the Genus Polygala in Mexico, Central America, and the West Indies. Contr. Gray Herb. N. S. no. 47: 1-122.
Galium pilosum and its varieties. Rhodora 18: 190-195. (With C. A. Weatherby).
Compositae novae imprimis ardinae Weberbauerianae. Bot. Jahrb. Engler 54: Beibl. 119 (no. 8): 47-51.

1917

Statice in North America. Rhodora 19: 1-9.
Utricularia fibrosa in Massachusetts. Rhodora 19: 38.
Polymnia Uvedalia and its varieties. Rhodora 19: 46-48.
Oenothera pumila L. var. rectipilis var. nov. Rhodora 19: 110-111.
A new Rudbeckia from Indiana. Rhodora 19: 113-115.
Bidens Holwayi Sherff & Blake, sp. nov. In E. E. Sherff, Bot. Gaz. 54: 39-40.
Vernonia altissima Nutt. var. taeniotricha var. nov. Rhodora 19: 167-168.
Notes on the systematic position of Clibadium, with descriptions of some new species. Contr. Gray Herb. n.s. no. 52: 1-8.
A revision of the Genus Dimerostemma Cass. Contr. Gray Herb. n.s. 52: 8-16.
New and noteworthy Compositae, chiefly Mexican. Contr. Gray Herb. n.s. no. 52: 16-59.
Descriptions of new spermatophytes, chiefly from the collections of Prof. W. E. Peck in British Honduras. Contr. Gray Herb. n.s. no. 52: 50-106.
Two new polygonums from New England. Rhodora 19: 232-235.
The varieties of Chimaphila umbellata. Rhodora 19: 237-244.

1918

On the names of some species of Viburnum. Rhodora 22: 11-15.
Notes on the Clayton Herbarium. Rhodora 20: 21-28, 48-54, 65-73.
Further new or noteworthy Compositae. Contr. Gray Herb. n.s. 53: 23-30.
New Spermatophytes collected in Venezuela and Curaçao by Messrs. Curran and Haman. Contr. Gray Herb. n.s. 53: 30-55.
New Plants from Oaxaca. Contr. Gray Herb. n.s. 53: 55-65.
Lycopodium sabinaefolium Willd. var. sharonense (Blake) comb. nov. Rhodora 20: 60.
A variety of Smilax glauca. Rhodora 20: 78-80.
Note on the proper name for the Sassafras. Rhodora 20: 98-99.
Notes on District of Columbia Juncaceae. (F. V. Coville & S. F. Blake) Proc. Biol. Soc. Wash. 31: 45-46.
Notes on the flora of New Brunswick. Rhodora 20: 101-107.
A revision of the genus Viguiera. Contr. Gray Herb. n.s. 54: 1-205.
Directions for the preparation of plant specimens for identification. U. S. Dept. Agric. Bur. Pl. Indust., Econ. & Syst. Bot. (circ.) 2 p.

1919

Revision of Ichthyomethia, a genus of plants used for poisoning fish. Journ. Wash. Acad. 9: 241-252.
Picramnia pistaciaefolia Blake & Standl. In P. C. Standley, Contr. U. S. Nat. Herb. 20: 218.
The genus Homalium in America. Contr. U. S. Nat. Herb. 20: 221-235.
New South American spermatophytes collected by H. M. Curran. Contr. U. S. Nat. Herb. 20: 237-245.
Juncaceae. In A. S. Hitchcock & P. C. Standley, Flora of the District of Columbia and vicinity. Contr. U. S. Nat. Herb. 21: 117-119. (With F. V. Coville).
A new Salvia from Guatemala. Proc. Biol. Soc. Wash. 32: 187-188.
New Plants from Sinaloa. Proc. Biol. Soc. Wash. 32: 189-193.
The anay, a new edible-fruited relative of the avocado. Journ. Wash. Acad. Sci. 9: 457-462.

1920

A preliminary revision of the North American and West Indian avocados. Journ. Wash. Acad. Sci. 10: 9-21.

Directions for collecting flowering plants and ferns. U. S. Dept. Agric. Dept. Circ. 76. 8 p. (Reissued 1932).

Revision of the true Mohoganies (Swietenia). Journ. Wash. Acad. Sci. 10: 286-297.

Nine new plants of the genus Stylosanthes. Proc. Biol. Soc. Wash. 33: 45-53.

(Five new species of Carduaceae from Cuba). In N. L. Britton, Mem. Torrey Bot. Club 16: 114-115, 116-117.

Five new species of Cedrela. Proc. Biol. Soc. Wash. 33: 107-111.

Two new Salvias from Guatemala. Proc. Biol. Soc. Wash. 33: 113-115.

New trees and shrubs from Mexico and Guatemala. Proc. Biol. Soc. Wash. 33: 117-120.

1921

Neomillspaughia, a new genus of Polygonaceae, with remarks on related genera. Bull. Torr. Club 48: 77-88.

The American species of Maximilianaea (Cochlospermum). Journ. Wash. Acad. Sci. 11: 125-132.

New trees and shrubs from Yucatan. Proc. Biol. Soc. Wash. 34: 43-46.

Revision of the genus Acanthospermum. Contr. U. S. Nat. Herb. 20: 383-392.

Revision of the genus Flourensia. Contr. U. S. Nat. Herb. 20: 393-409.

Revision of the genus Oyedaea. Contr. U. S. Nat. Herb. 20: 411-422.

Revision of the genus Tithonia. Contr. U. S. Nat. Herb. 20: 423-436.

New Meliaceae from Mexico. Proc. Biol. Soc. Wash. 34: 115-117.

A new Aspilia from Trinidad. Proc. Biol. Soc. Wash. 34: 119-120.

A remarkable new species of Ichthyothere. Journ. Wash. Acad. Sci. 11: 301-303.

1922

New plants from Guatemala and Honduras. Contr. U. S. Nat. Herb. 24: 1-32.

On the generic name Wikstroemia. Journ. Bot. 60: 52-53.

New names for three North American Asteraceae. Proc. Biol. Soc. Wash. 35: 78.

Two new species of Acanthospermum from the Galapagos Islands. Journ. Wash. Acad. Sci. 12: 200-205.

Two new western weeds. Science II. 55: 455-456.

The identity of the genus Adventina Raf. Rhodora 24: 34-36.

Key to the genus Diplostephium, with descriptions of new species. Contr. U. S. Nat. Herb. 243: 65-86.

Native names and uses of some plants of eastern Guatemala and Honduras. Contr. U. S. Nat. Herb. 24: 87-100.

(Botanical note on the capulin, Prunus serotina). In W. Popenoe and A. Pachano, The capulin cherry, Journ. Heredity 13: 58, footnote.

New plants from South and Central America collected by Wilson Popenoe. Proc. Biol. Soc. Wash. 35: 117-123.

New Asteraceae from Utah and Nevada. Proc. Biol. Soc. Washington 35: 173-177.

Two new species of Moraceae from South America. Proc. Biol. Soc. Wash. 35: 179-180.

Two new species of letterwood (Piratinera). Journ. Wash. Acad. Sci. 12: 391-399.

Instrucciones para preparar muestras botánicas. 2 p. (Mimeo.) (With Wilson Popenoe).

New South American Asteraceae collected by E. W. D. Holway. Bot. Gaz. 74: 414-430.

1923

(Three new species of Polygala). In N. L. Britton, Studies of West Indian plants. XI. Bull. Torrey Bot. Club 50: 39-41.

Oenothera perennis L. var. rectipilis (Blake) comb. nov. Rhodora 25: 47.

Two new genera related to Narvalina. Journ. Wash. Acad. Sci. 13: 102-105.

Three new composites from Bolivia. Proc. Biol. Soc. Wash. 36: 51-54.

Notes on the North American species of Limonium. Rhodora 25: 55-60.

New composites from Salvador. Journ. Wash. Acad. Sci. 13: 143-146.

A new Gymnocoronis from Mexico. Proc. Biol. Soc. Wash. 36: 179-180.

(Senecio malmsteinii Blake, sp. nov.). In I. Tidestrom, New ... species of plants from Utah and Nevada, Proc. Biol. Soc. Wash. 36: 183-184.
Two Mediterranean clovers new to the United States. Science n. ser. 57: 665.
On the type-species of Bignonia. Journ. Bot. 61: 191-192.
Two new composites from Florida. Bull. Torr. Club 50: 203-205.
The forms of Osmorhiza longistylis. Rhodora 25: 110-111.
Notes on two Ericaceae of the Boston District Flora. Rhodora 25: 116.
(Meliaceae). In P. C. Standley, Trees and Shrubs of Mexico. Contr. U. S. Nat. Herb. 23: 553-563.
(Polygalaceae). In Standley, l.c. 23: 578-595.
(Violaceae). In Standley, l.c. 23: 837-838.
New American Connaraceae. Bull. Torrey Club 50: 273-275.
New botanical names. Proc. Biol. Soc. Wash. 36: 200.

1924

Many-spiked lycopods. Amer. Fern Journ. 13: 126-128.
Eight new Asteraceae from Mexico, Guatemala, and Hispaniola. Proc. Biol. Soc. Wash. 37: 55-61.
Erucastrum Pollichii in West Virginia. Rhodora 26: 22-23.
Polygalaceae. N. Amer. Fl. 25: 305-379.
Notes on American Lespedezas. Rhodora 26: 25-34.
New Polygalas from Colombia. Bull. Torrey Bot. Club 51: 83-89.
New American Asteraceae. Contr. U. S. Nat. Herb. 22: 587-661.
(Verbesina salvadorensis Blake, sp. nov.). In P. C. Standley, New species of plants from Salvador. IV. Journ. Wash. Acad. Sci. 14: 246-247.
Revision of the American species of Rinorea. Contr. U. S. Nat. Herb. 20: 491-518.
New plants from Venezuela. Contr. U. S. Nat. Herb. 20: 519-541.
Hemibaccharis, a new genus of Baccharidinae. Contr. U. S. Nat. Herb. 20: 543-554.
New plants from Central and South America. Journ. Wash. Acad. Sci. 14: 284-293.
The name of the spearmint. Rhodora 26: 171-175.
New South American Verbesinas. Bull. Torrey Club 51: 421-436.
(Stylosanthes eciliata Blake, sp. nov.). In T. S. Brandegee, Plantae Mexicanae Purpusianae XII. Univ. Calif. Publ. Bot. 10: 429.
Five new plants from Venezuela. Journ. Wash. Acad. Sci. 14: 452-456.
New American Meibomias. Bot. Gaz. 78: 271-288.

1925

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(Trichilia unifoliola Blake & Standley, Vernonia lankesteri Blake, spp. nov.). In P. C. Standley, New plants from Central America — II. Journ. Wash. Acad. Sci. 5: 103, 106-7.
Two new species of Sciaphila. Proc. Biol. Soc. Wash. 38: 45-48.
Records of Bidens frondosa var. anomala Porter. Rhodora 27: 34-35.
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SERGEI VASSILIYEVICH JUZEPCZUK

(1893-1959)

B. Schischkin (Leningrad)

On January 8, 1959 Dr. S. V. Juzepczuk the prominent Soviet botanist and taxonomist died in Riga at the age of 66.

S. V. Juzepczuk was born on January 28, 1893 in Moscow. He attended the primary school in Orel and later the gymnasium in Riga from which he graduated with a gold medal in May, 1911. From the autumn of 1911 he was a formal student of St. Petersburg University (Physico-Mathematical Faculty, Section of Biology), where he took an active part in the work of the botanical circle under the guidance of V. L. Komarov. He studied at the University until 1918, (postponing his graduation examinations).

In 1915 S. V. Juzepczuk joined an expedition to the then Tver province for the purpose of studying the flora and vegetation of the meadows and continued these studies during 1916. Later (1916—1917) he worked in the Herbarium of Helsingfors (Helsinki), studying the genera *Alchemilla* L. and *Taraxacum* Zinn under the guidance of Herald Lindberg, an outstanding botanist. In the summer of 1917 he returned to the Tver province to study *Alchemilla* and *Taraxacum* in the field. During 1917—1918 S. V. Juzepczuk devoted himself to the study of the genus *Dryas* and in 1919 published his work on that genus which attracted the attention of many taxonomists.

In May 1919 S. V. Juzepczuk was elected a junior conservator by the Council of the Botanic Garden. Until 1925 he was a curator of the Caucasus section of the Herbarium and later a curator of the Section of the European part of the U.S.S.R.

During 1925—1928 S. V. Juzepczuk took part in an expedition to Central and South America organized by the Rubber Trust and the Research Institute of Applied Botany and New Cultivated plants. This expedition was headed by J. N. Voronov, with S. M. Bukassov among the other participants.

The ample material collected during the expedition is still being studied.

S. V. Juzepczuk paid special attention to the collection of the material of the genus *Solanum*. Later, in the course of further studies of these collections, a number of new species of this genus were established by S. V. Juzepczuk and S. M. Bukassov.

Upon his return from America S. V. Juzepczuk participated in a number of collective publications prepared mainly by the workers of the Section of Taxonomy and Geography of Vascular Plants of the Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R., such as "The Weeds of the U.S.S.R.", 1935, in four volumes, "The Flora of the South-East of the European part of the U.S.S.R.", 1936, in six fascicles and the "Flora U.R.S.S." in 30 volumes. His participation in the latter was especially active, for he was the author of several excellent accounts of families, subfamilies, and genera of monocotyledons, such as, for instance, the genus *Eriophorum* (1935) and the families Sparganiaceae, Potamogetonaceae, Zosteraceae, Najadaceae, Alismataceae (1934). Of the dicotyledons he compiled an account of the subfamily Rosoideae, the taxonomy of which is considered to be amongst the most intricate.

The work on the preparation of the "Flora U.R.S.S." was interrupted by the outbreak of the Great Patriotic War of 1941—1945. In February, 1942 S. V. Juzepczuk with other workers of the Komarov Botanical Institute, was evacuated to Kazan in a state of serious dystrophia. In Kazan he continued his studies of the genus *Alchemilla* and also contributed a great deal to the "Flora U.R.S.S." by

writing the Latin diagnoses of numerous new species of *Astragalus* for the Addenda XI (in vol. XII). This had to be done as the authors of many accounts of this genus were then scattered all over the Soviet Union and even communication with some of them was impossible (M. G. Popov, A. G. Borissova), while N. F. Goncharov, one of the principal authors of vol. XII (devoted to *Astragalus*) had died of dystrophia in Leningrad in 1942. On returning to Leningrad in the autumn of 1944, S. V. Juzepczuk with tenfold energy gave himself up to the preparation of the manuscript for the subsequent volumes of the "Flora U.R.S.S." on the genus *Anthyllis* (vol. XI, 1945), on the families Linaceae (vol. XIV, 1949), Cistaceae (vol. XV, 1949) and Violaceae (vol. XV, 1949). For the accounts of these three families S. V. Juzepczuk was in 1952 awarded the Stalin prize (at the same time as B. K. Schischkin and A. J. Pojarkova).

From the beginning of his work in plant taxonomy, S. V. Juzepczuk took part in numerous expeditions. Besides the studies in the Tver province mentioned above, he made several trips to the Caucasus, Middle Asia, Altai, to the Urals, and especially frequently to the Crimea. He always returned from his expeditions with an excellent herbarium, thoroughly dried, almost always bringing also some fresh material (in particular of the genus *Alchemilla*) which he cultivated at the Botanic Garden in Leningrad.

Of his expeditions to foreign countries, the first to Central and South America (1925—1928) has already been mentioned. In 1947 he went on a short expedition to Brazil with B. K. Schischkin, L. E. Rodin and L. F. Pravdin. They brought back a small herbarium (2000 sheets) and a valuable collection of live tropical plants, a gift of the Botanic Garden of Rio de Janeiro to the Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R. (Almost all the glass-house plants of the old collection had been destroyed by a 10 = cwt bomb at the time of the air raid on November 15, 1941).

After 1952 S. V. Juzepczuk continued his work on the preparation of the "Flora U.R.S.S.", concentrating his attention on a number of families of Sympetalae. Thus, he prepared the accounts of the following genera of Labiatae: *Teucrium*, *Scutellaria*, *Sideritis*, *Neustruevia*, *Mechania*, *Galeopsis*, *Erianthera*, *Ziziphora* (vol. XX and XXI, 1954). He was also the author of the accounts of the genera *Euphrasia* (vol. XXII, 1955) and *Solidago* (vol. 25, 1959). He also planned to undertake the account of the extensive genus *Cousinia*, but his premature death prevented the fulfilment of this intention.

The theoretical problem S. V. Juzepczuk was most interested in was the problem of species. Among his works devoted to this problem the most important are the following publications:

1) S. V. Juzepczuk. "The problem of Species in the light of Charles Darwin's theory of evolution". Sovietskaia Botanika, No. 6—7, pp. 12—34, 1938.

2) S. V. Juzepczuk. "C. Linnaeus and the problem of species". Vestnik Akademii Nauk S.S.S.R. (Bulletin of the Academy of Sciences of the U.S.S.R.) No. 5, pp. 44—50 (1957).

3) S. V. Juzepczuk. "V. L. Komarov's concept of species, its historical development and its implementation in the 'Flora U.R.S.S.'."

In the symposium "The Problem of Species in Botany", pp. 130—204 (1959).

S. V. Juzepczuk participated with enthusiasm in the preparation of the exsiccata of the Section of Taxonomy and Geography of Vascular Plants, especially during the last years of his life. These have been issued since 1898 under the title "Schedae ad Herbarium Florae Rossicae" (since 1932, "Schedae ad Herbarium Florae U.R.S.S.").

In this series he published many new species and wrote a great number of labels with very interesting critical comments on many other species. He always supplied ample material for this series, bringing 50 sheets of every species from his expeditions.

By the death of S. V. Juzepczuk Botanical Science has lost an eminent and gifted plant taxonomist who devoted all his life to the study of the Plant Kingdom. He was a man of exceptional erudition, who never denied either valuable advice or useful criticism to his colleagues and pupils and always willingly undertook supervision of postgraduates and of persons working for the doctor's degree, never sparing his time and energy.

The memory of S. V. Juzepczuk, the erudite scientist, will live for many years.

. . . EITHER, OR . . .

G. C. Ainsworth (Kew)

As every biologist is uncomfortably aware (see L. F. Koch, *Taxon* 9(3): 64—66, 1960), but usually prefers to ignore, difficulties are inherent in the dichotomies which underlie the classification of living things. These difficulties occur at all levels. In everyday usage what could be more clear cut than the distinction between living and non-living? The parrot so obviously belongs to a different category from that of its cage. But the virus of psittacosis which may kill both the parrot and its owner blurs a distinction which becomes even more uncertain for plant viruses which can be separated from their 'hosts', and even dismembered and re-constructed, and yet multiply, or are multiplied, when re-introduced into the cells of appropriate living plants. Similarly, the distinction between animals and plants has, since the discovery of the microscope, been a constant source of trouble as is instanced by the names Mycetozoa and Myxomycetes for organisms which have been claimed in turn or simultaneously by zoologists and botanists. The recognition of four sub-kingdoms of plants as advocated by Koch (loc. cit.) may have much to recommend it but under such a scheme would the fungi be any more happily classified in one of them than at present? In other words, to reiterate Professor G. W. Martin's question, 'Are fungi plants?'.

Although traditionally the fungi are regarded as an equivalent to the other major plant groups they have at least one peculiar distinction. No fundamental adjustments would be required in the general economy of nature if bryophytes were eliminated or if ferns, or gymnosperms, or flowering plants, or even all animals, became extinct. In the absence of algae the seas would be sterile but without fungi (and bacteria) a vital link would be missing in both the carbon and nitrogen cycles. There would be no decay, and life as we know it would long ago have become impossible. This distinction, though elementary, is surely a valid reason for carefully considering whether organisms so physiologically and ecologically distinct do not merit classification apart from both plants and animals.

The dualism so prevalent in Western thinking goes back to the Garden of Eden where, presumably, Adam on first seeing toadstools decided that as they were clearly not animals they must be plants. In the circumstances this was a not unreasonable decision, and one which, like the names given to living creatures by early man (fide R. A. Wilson, *The miraculous birth of language*, 1937), has stuck. To a modern observer one of the most remarkable features of living things is their uniformity in basic genetical behaviour, in basic cytology, and in the fundamental role recently attributed to DNA (deoxyribonucleic acid) and RNA (ribonucleic acid) in their

chemical make-up, three features which are possibly only different aspects of one fundamental uniformity. Although, as classical taxonomic practice assumes, differences in form are frequently correlated with differences in physiological functioning, there seems to be a growing practice where there is conflict for physiology to take precedence over morphology as a taxonomic criterion, e.g. the similar morphological series based on different physiological patterns among algae. It is by adducing evidence on such lines that a strong claim could be made that to classify fungi as a separate kingdom would be no more arbitrary than so to dispose plants and animals.

Why, it may be asked, is it necessary to consider changes in the present traditional arrangements with which botanists rarely express dissatisfaction? Because, a mycologist might reply, taxonomic beliefs influence both theory and practice, and current taxonomic dogmas are restrictive.

For example, while every taxonomist will admit that 'nomenclature is the handmaid of taxonomy' it is equally clear that an internationally accepted code of nomenclature by laying down rules regarding categories, typification, and so on greatly affects taxonomic practice. Fungi considered as plants are subject to the Botanical Code which was primarily devised by phanerogamists for the naming of vascular plants and contains many provisions inapplicable to such different and mutable organisms as fungi for which there are still so many unsolved problems regarding the delimitation of taxa; and this subjection of mycological taxonomy to the Botanical Code has not always been for the best. Botanical legislators have, however, been sympathetic to mycologists. The Code contains a number of special provisions for the nomenclature of fungi. Mycologists thus feel no sense of the crisis which led bacteriologists during the past decade to develop their own Code of Nomenclature, a Code which has been recognized by botanists. In other words, from a nomenclatural standpoint bacteria are not plants.

Taxonomic beliefs have other effects. At almost every university provision for the study of plants and animals has for long been considered obligatory. In Great Britain there are some twenty-five university departments of botany (and a similar number of zoology) but there is not one department devoted to the study of fungi. Some botanical departments have a tradition for the study of fungi but at no university is the tradition given the long term security afforded by independant departmental status. Such a pattern is common elsewhere. This is all the more strange when it is recalled that there is reason to suppose that the number of species of fungi is at least equal to the number of flowering plants (the primary cataloguing of the quarter of a million species of which will, according to W. T. Stearn, be completed in another 20 years or so, while there are possibly some 150,000 more fungi to be described) and the ramifications of mycology are so wide and diverse as to make mycology a strong candidate for adoption as an independent discipline at both undergraduate and postgraduate levels. One factor determining this lack of recognition is undoubtedly the tradition that the study of fungi is merely a branch of botany.

Whatever view is held on the status of the fungi the fact remains that the dichotomy between plants and animals is blurred. Perhaps an acceptable solution will eventually be found in a system of four kingdoms (first suggested by Haeckel in 1894) as advocated by H. F. Copeland in *The classification of lower organisms*, 1956, if the possibly more logical solution to federate all 'kingdoms' of living things as a single unit should prove too heterodox.

SUPERFLUOUS NAMES AND LATER HOMONYMS

C. X. Furtado (Singapore)

One of the most singular rules in the Nomenclatural Code (1956) is the one that deals with the superfluous names (Art. 64-1) first approved at the Cambridge Botanical Congress (1930) and subsequently confirmed at Amsterdam (1935). A consideration of this rule in 1939 led me to deduce the following:

"Moreover no advantage is gained by denying priorability to such unambiguous specific names as are capable of rendering their later homonyms impriorable; on the contrary such a denial not only does not maintain the principle of economy in epithets but also creates a class of unusable names which are both valid and unambiguous.... it is absolutely essential that the rules concerning validity, priorability and priority (or legitimacy) should not be confused so as to render their application difficult.... There is no proper reason why certain offences against the priority rules should be singled out for penalization and others escape it." (Gard. Bull. 11: 3. 1939). I suggested therefore the deletion of this rule from the Code.

Typification Simplifies the Problem

Later in 1949 the plea for the deletion of the rule was again affirmed for reasons of clarity and precision in the Code; for, since the rule of priority is applied only to the priorable names or epithets in order to find the correct name or epithet in a given circumstance, it would be a weakness in the Code, or in the jurisprudence on which it is based, I maintained, if the priority rule was allowed to be invoked also in determining the priorability of names or epithets. In that paper some examples were also discussed to show how the application of the rule of superfluous names overlooked many old practices in citing synonyms, or led to the rejection of good, long current names in order to create new ones. (Op. cit. 12: 327-329. 1949).

Ficus erecta Gedner (1786) was given there as an instance of an apparently superfluous name because *F. pumila* L. was quoted in its synonymy; but the author's description and the fact that in another page of the same publication he retained *F. pumila* L. as a good species, show that some such phrase as "pro parte", "sensu auctorum" or "quoad specimina in herbariis determinata" is understood after the synonym *F. pumila* L. Attention was also drawn there to the cases like that of *Cerastostylis eriarioides* Hk. f. (1891) which, though published in contravention to the priority right of *Eria pygmaea* Hk. f. (1890), has to be retained because *pygmaea* Hk. f. cannot now be legitimately adopted under *Cerastostylis* because of *C. pygmaea* Gagn. (1932). Cases of this class where the new name created and the older synonym cited are typonymous or exactly synonymous are not as many as the ones where the two names are not synonymous; but nevertheless they are many. In some cases the author of the new name gives reasons why he does not employ the oldest priorable epithet. Thus *Embelia javanica* A. DC. (1844), was created for *Ardisia scandens* Bl. (1826) with the following note: "Nomen mutavi quia omnes scandentes." But since *E. scandens* (Bl.) cannot now be instated as the correct name because of *E. scandens* (Lour.) Mez (1902), *E. javanica* A. DC. should continue as the correct name of the species. In all such cases, the rule of priority works satisfactorily if the rule of superfluous names is eliminated from the Code.

It must not be overlooked also that there was formerly the custom of citing a dubious or unidentifiable name in the synonymy to indicate the author's suspicions as to the identity of the older synonym, even when both the description and existing types were insufficient to allow one to make an accurate determination. It was this practice that later led some authors to make many new combinations based on Loureiro's, Blanco's and other species and reject many well-typified names of subsequent authors, an activity resented by many botanists. Thus, *Gnetum indicum* (Lour.) Merr. (1917) was based on *Abutua indica* Lour. (1790) as the correct name for *G. latifolium* Bl. (1834) and *G. funiculare* Brong. (1834). However Markgraf (Bull. Jard. Bot. Buitz. 10: 466 & 490. 1930) has shown that both the specimens of Loureiro and the Rumphian plate of *Gnemon funiculare* Rumph. (1747) cited by Loureiro under his species are not accurately identifiable taxa, and that there are reasons to believe that both these are two distinct species. On geographical grounds Markgraf suggests that *Abutua indica* Lour. might be

identical with his newly described species, *G. montanum* Mgf. (1930). Had he indicated his suspicions merely by citing the name in the synonymy as was the practice formerly with many botanists, *G. montanum* would have been considered a superfluous name, even though the identity of *Abutua indica* Lour. is not clear.

Ross (Taxon 7(9): 265. 1958) has put forward a plea to render inoperative the rule of superfluous names in the case of new combinations like *Chloris radiata* (L.) Sw. (1788) instated with a description, accompanied by a citation of its basinym *Agrostis radiata* L. (1759) and an older priorable synonym *Andropogon fasciculatum* L. (1753). The status should be judged, Ross states, by their typification. If the two synonyms are conspecific, then the epithet *fasciculatum* L. (1753) would take precedence. If not, then *Ch. radiatus* (L.) Sw. should not be rejected as a superfluous name but retained for its type (basinym) *A. radiata* L. and let the rule of priority take effect as if the rule of superfluous names did not exist in the Code. But there is no valid reason why a new combination, a new name based on an older synonym, and a new species based on the description and citation of synonyms should be given different treatments as to their legitimacy or priorability. On the contrary the present pleas for a different treatment show that the rule of superfluous names is rather an anomaly in the Code. In fact the recent tendency to reject well-known names seems to strengthen the cause of those who plead for the conservation of specific names.

Van Steenis, also favours the continuation of the old procedure by ignoring the rule of superfluous names. Thus in *Flora Malesiana* (5: 554. 1958) van Steenis persists in retaining *Moringa oleifera* Lamk. (1785) even though the author of the binomial had quoted under it an older priorable synonym *Balanus myrepsica* Gars. (1764) = *M. myrepsica* (Gars.) Thell., because the description of Lamarck was "entirely based" on specimens the author had seen and "does not contain any characters of *Moringa myrepsica* (Gars.) Thell."

The Rule of "Later Homonym"

In a recent paper Fosberg (Taxon 8: 65. 1959) seems to consider as illogical the objections for name changes under the strict application of the rule of superfluous names, and so he instates *Serianthes dilmyi* Fosb. for *Serianthes grandiflora* Benth. But Fosberg overlooks the fact that under the rules it is possible to defend that, though *S. grandiflora* Benth. (1844) including *Acacia myriadenia* Bert. is illegitimate being a superfluous name, *S. grandiflora* Benth. (1846) *minus* *S. myridenia* (Bert.) Benth. (1846) is the legitimate correct name for the taxon and not a later homonym of *S. grandiflora* Benth. (1844), and that therefore *S. dilmyi* Fosb. is superfluous! This may seem a novel procedure, but pleas to redefine the term "later homonym" more precisely and to prevent such procedures were overruled by the 1950 Congress (cf. Furtado in Gard. Bull. 11: 26-27. 1939 & 12: 337-338. 1949). Under the existing definition of the homonymy Sprague and Green (Kew Bull.: 78-80. 1938) deduced that, while *Pseudotsuga taxifolia* (Lamb.) Britton (1889) was illegitimate, *Ps. taxifolia* (Lamb. ex Poir.) Rehder (1938) was the correct name for the Douglas Fir, because the holotypes of both these names were identical. (Art. 64-2 defines a later homonym as a name that duplicates a previous valid name of a taxon of the same rank but "based on a different type.") Similarly Hubbard (Kew Bull.: 319. 1936) invoked the rule in Art. 64-1 to reject *Loudetia* Hochst. ex Braun (1841) as superfluous name for the older *Tristachya*, but admitted *Loudetia* Hochst. ex Steud. (1854) as the correct name for the genus and "not a later homonym, since it is based on the same type as the illegitimately applied name *Loudetia* A. Br." (cf. for discussion on these and other cases *see* Furtado in Fedde, Repert. 44: 256-264. 1938).

Circumscription and Typification

Confusion of typification with circumscription to which Fosberg refers in his discussion seems to me much deeper than is generally suspected and calls for some clarification in the Code itself. Perhaps the following consideration might help to convey my meaning.

Strictly speaking a name cannot be separated from the type. Even a description based on new specimens loses its identity and becomes intimately fused with the older one if the new description is given under an older validly published name. As a result of this fusion, the type of the older description is also the type of the new circumscription; there is no means of expressing nomenclaturally a distinction between these two descriptions, since the new description did

not create a new taxon. There is, however, a possibility of expressing nomenclaturally the misidentified specimens, but nomenclatural expressions indicating a misinterpretation or misidentification has no status as a description of a taxon. Thus if under *Ardisia scandens* Bl. two specimens were used as syntypes, one from Java and the other from Sumatra, one could not split the components into two taxa thus: *Embelia javanica* A. DC. (basinym = *A. scandens* Bl. quoad specimen typicum *javanicum*) and *E. sumatrana* Doe (basinym = *A. scandens* Bl. quoad specimen non-lectotypicum, *sumatrense*).

This principle should hold good also in cases where the description, though based originally on only one type specimen, was subsequently altered to include one or more elements that have now to be separated taxonomically and nomenclaturally from the original taxon. One may separate the specimens that have been misidentified with the original taxon, but new descriptions will be needed to as many specimens dissociated from the old taxon to be made individually the holotypes of the new taxa or names. However this ruling, if applied restrospectively, will render several names invalid at least on the dates on which they are accepted as validly published. Hence an explicit rule is needed to safeguard the past procedures as well as to proscribe validation in future of new taxa by referring to misapplications (cf. also Furtado in Gard. Bull. 9: 258-260. 1937).

It is under this principle that Fosberg (Taxon 8: 53. 1959) regards *Brugmansia candida* Pers. (1805) as having been validated by a reference to a misinterpretation of *Datura arborea* L. *sensu* Ruiz et Pavon (1799) and deduces that Persoon's binomial "probably should not be regarded as superfluous since Persoon definitely ascribed his synonym to R. & P. without mention of Linnaeus". This conclusion of Fosberg shows that the rule of superfluous names is not as clear as he claimed it to be in the paper quoted above. To me the case of *B. candida* Pers. differs in no material way from *Serianthes grandiflora* Benth. (1844) and *Moringa oleifera* Lamk. (1785). Persoon gave not only new generic and specific descriptions but also quoted the Linnean binomial *Datura arborea* in the synonymy and also quoted the plate and the description of Ruiz and Pavon given under *D. arborea* L. In older books the author's name is often omitted after the taxon's name or the latter is erroneously attributed to the person who had first given it in the pre-starting literature or in herbarium; and sometimes the reference quoted under a taxon is the latest monograph or book where its best description is available. In Persoon's citation there is no means to judge that he had used the expression to mean *Datura arborea* L. *sensu* Ruiz et Pav., non *sensu* typica. The fact that Persoon failed to account elsewhere *D. arborea* L. *sensu* typicum also favours my contention. Further had Persoon adopted the binomial *Brugmansia arborea* in place of *B. peruviana* without making any change in the diagnosis and citations given under the latter, it is certain that botanists would have regarded the binomial a new combination based on *Datura arborea* L. and not a new species with *D. arborea* L. *sensu* R. & P., non *sensu* Linneano, as its synonym.

Even in this case, if Art. 64-1 is ignored, the typification helps to clarify the circumscription of the taxon and simplifies the application of the rule of priority. If a nomenclatural entity may be typified on one of the elements to the exclusion of the other syntype and if *Chloris radiata* (L.) Sw. is to be typified on its basinym to the exclusion of even older synonyms and be freed from being incriminated under the rule of superfluous names, why not *Serianthes grandiflora* Benth. and *Moringa oleifera* Lamk. be similarly typified and allowed each to eliminate from its circumscription the synonym that prevents it from being used as the correct name of the typified taxon? There appears to be no valid reasons why unequal procedures should be followed, and the question of priority should be allowed to be involved when the problem is decided normally under the rules of typification and circumscription.

Conclusions

From the foregoing it is obvious that the rule of superfluous names is not sound in the first instance on the basis of the jurisprudence because the rule of priority meant to be applied only to the names and epithets that are priorable is invoked, in this case, in determining the priorability of the names and epithets. Secondly the rule calls for exceptions as is shown in the pleas put forward by Ross. Further it ignores the fact

that older botanists quoted synonyms also to indicate misdeterminations and misapplications in literature and herbaria as well as to express their suspicions as to the identity of an older unidentifiable taxon, that is, cases in which more precise expressions are adopted at present. Further most interpreters of the rule of superfluous names (except perhaps the original sponsors of the rule) have ignored the rule of the later homonyms which would make names like *Serianthes dilmyi* Fosb. (1959) superfluous for *S. grandiflora* Benth. (1846) non Benth. (1844). In view of this it appears that the rule of superfluous names (Art. 64-1) should be deleted, that of the later homonyms amended, and that the status of the superfluous names be decided under the rules of typification and other rules normally applied in such circumstances.

THE APPLICATION OF THE GENERIC NAME *POLYSTACHYA* HOOK.

(Orchidaceae)

V. S. Summerhayes and A. A. Bullock (Kew)

The determination of the correct name of the type species of the generic name *Polystachya* Hook. (1824) involves certain taxonomic as well as nomenclatural considerations, in spite of the fact that Hooker described the genus as monotypic. It also underlines the fact that the type of a generic name is a species and that the name given to it by the author of the generic name may be inadmissible under the International Code.*

The type of *Polystachya* Hook. is the species represented in Hook. Exot. Fl. 2: *t. 103* (1824), and as pointed out by Rickett and Stafleu (Taxon 8: 258. 1959) the name *P. luteola* applied to it is illegitimate because Hooker cited *Epidendrum minutum* Aublet (1775) and *Cranichis luteola* Sw. (1806) as synonyms. The same authors also pointed out that *Polystachya* may be removed from the list of *nomina generica conservanda* because the opposing name *Dendrorkis* Thouars (1809) [*Dendrorchis* Thouars (1822)] was not validly published. They also stated that the illegitimate *P. luteola* (Sw.) Hook. may be replaced by the later *P. luteola* Wight (1852) under the provisions of Art. 72, note, of the Code. This was because at the later date a combination under *Polystachya* from *Epidendrum minutum* could not be made on account of the existence of *P. minuta* A. Rich. et Galeotti (1845), which applies to a different species.**

It is the purpose of this note to show that the above interpretation of the Code is faulty, and to determine the correct name of the type species of *Polystachya*. Art. 72 gives instruction as to the procedure to be followed when a name is found to be illegitimate under the preceding Articles (63-71), and the note quoted by Rickett and Stafleu reads as follows: "When a new *epithet* is required, an author may, if he wishes, adopt an *epithet* previously given to the taxon in an illegitimate name, if there is no obstacle to its employment in the *new position or sense;* the epithet in *the resultant combination* is treated as new". The italics have been inserted to emphasize what we consider to be the significant words in the note; it is inescapable, in our opinion, that the epithet must be transferred in order to provide a "new position" and a "resultant combination", or that the new name must apply to a different species in order to give a "new sense".

These two points may now be considered in turn. In regard to "new position", in this particular instance *P. luteola* Wight gives no new position for the epithet; it is in fact merely a misquotation of *P. luteola* (Sw.) Hook. and the "resultant combination" remains illegitimate. The question of "new sense" is more complicated. The view that the name is used in a new sense depends primarily on the assumption that Wight's plant is the same as the plant described by Hooker, but not the same as either the Guianan plant of Aublet (1775) or the Jamaican plant of Swartz (1800, 1806).

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* Here and elsewhere in this note the 1956 (Paris) edition of the Code is referred to.

** A similar interpretation of Art. 72, note, is suggested by Rickett and Stafleu (*l.c.* 259), in Note 1 under *Eulophia* R. Br. (*nom. cons.*).

This idea may receive some support from the fact that Hooker (1821) stated that the plant he figured had been received from Dr. Wallich and grown at the Liverpool botanic garden. The immediate inference is that it was an Indian plant. Hooker also cited, however, the synonyms *Epidendrum minutum* Aublet (1775) and *Cranichis luteola* Sw. (1806), both of which refer to New World plants. Examination of Hooker's plate shows indeed that his identification with the American plants was correct and that his plant was in all probability received at Liverpool from the West Indies. Lindley (1838) first pointed out the discrepancy, and stated that he was unable to find the plant in Dr. Wallich's collections. J. D. Hooker, who studied the genus during the preparation of the *Flora of British India* (1891), evidently agreed that his father had been misinformed as to the source of the plant, for it was excluded whilst Wight's plant appeared under the name *P. wightii* Rchb. f. (1865).

Two possibilities therefore arise as to the application (i.e. "sense") of the name *P. luteola* Wight. If it is based on the same type as *P. luteola* (Sw.) Hook. (i.e. on an American plant) and is thereby used in the same sense, it is identical with the latter and also illegitimate. If, on the other hand, it is based on an Indian plant and is thereby used in a different sense, it is a later homonym and must be rejected under Art. 64(2).

Hooker's nomenclatural error was commenced by Swartz (1800, 1806), who twice published illegitimate names for Aublet's *Epidendrum minutum,* which he identified with the West Indian plant described by him as *Dendrobium polystachyon* in 1800 and as *Cranichis luteola* in 1806. The former name was used also by Willdenow (1805), Loddiges (1820) and Lindley (1821), but then disappeared from use and the epithet *luteola* gained acceptance.

The taxonomic and nomenclatural confusion was partially resolved by Reichenbach (1863); he provided the new name *P. wightii* Rchb. f. for Wight's Indian plant. *Cranichis luteola* Sw. he cited, with a query, under *P. extinctoria* Rchb. f., a new name for a West Indian plant, whilst *P. luteola* was reserved for another American plant. Reichenbach attributed *"P. luteola"* to Lindley (1821), citing *P. luteola* Hook. in synonymy, again with a query. Lindley, however, had at that time called the plant *Dendrobium polystachyon* Sw. Reichenbach remained somewhat doubtful as to the taxonomic position of *P. luteola* (Sw.) Hooker, which was not definitely identified with *P. extinctoria* Rchb. f. until 1910, when Fawcett and Rendle included both names in the synonymy of *P. minuta* (Aublet) Britton. This latter name was published by Britton in 1903 and was based upon *P. luteola* Hook. and hence upon *Epidendrum minutum* Aublet. Unfortunately, he had overlooked the earlier *P. minuta* A. Rich. et Galeotti, published in 1845* for another species not now included in *Polystachya* Hook.

Examination of Reichenbach's description and of the West Indian species of *Polystachya* makes it clear that Fawcett and Rendle were correct in identifying *P. extinctoria* Rchb. f. with *P. luteola* (Sw.) Hook. The former name is therefore correct for the type species of the generic name *Polystachya* Hook.

Finally, it may be noted that the name *P. luteola* has been misapplied on various occasions to Old World plants of India, Ceylon and Mauritius, but their correct names are not relevant to this note.

Polystachya extinctoria *Rchb. f.* in Walp. Ann. 6: 638. (1863).

Epidendrum minutum Aublet, Hist. Pl. Guiane Franç. 2: 824 (1775), *holotypus nominis generici Polystachyae.*

Dendrobium polystachyon Sw. in Kongl. Vetensk. Acad. Handl. 21: 247 (1800), nom. illeg.; Willd. Sp. Pl. 4: 137 (1805); Lodd. Bot. Cab. 5: *t. 458* (1820); Lindley, Coll. Bot. *t. 20* (1821).

Cranichis luteola Sw. Fl. Ind. Occ. 3: 1433 (1806), nom. illeg.

Polystachya luteola (Sw.) Hook. Exot. Fl. 2: *t. 103* (1824), nom. illeg.; Lindley, Bot. Reg. 24 (Misc.): 78 (1838); Kraenzlin in Ann. Naturhistmus. Wien 36: 150 (1923), et in Fedde, Repert. Sp. Nov. Beih. 39: 78 (1926).

P. minuta (Aublet) Britton in Small, Fl. S.E. Un. St. 328 (1903), nom. illeg., non A. Rich. et Galeotti [in Ann. Sc. Nat. Sér. 3. 3: 27.] (1845); Fawcett et Rendle, Fl. Jamaica 1: 48. (1910), cum syn.

Polystachya wightii *Rchb. f. l.c.* 640; Hook. f. Fl. Brit. India 6: 21 (1891).

[*P. luteola* (non Hook.); Wight, Ic. 5: *t. 1678* (1852).]

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* Although not universally overlooked, the earlier homonym was not included in *Index Kewensis* until Supplement XII, which was published in April 1959.

THE FAMILY POSITION OF MOULLAVA ADANSON

J. M. Gillett (Ottawa)

An error that is being perpetuated by the recent reprinting of the Register to the Genera Siphonogamarum of De Dalla Torre and Harms should be corrected.

In 1904 Dalla Torre and Harms listed *Moullava* Adans. (1763) as genus 69 of the Gentianaceae subfamily Menyanthoideae and as genus 6547 of the total generic list. The genus *Almeloveenia* Dennst. (1818) was given in synonymy but was listed also as genus 6 (9635 of the total list) of the Genera Incertae Sedis on page 583.

Although Adanson assigned no species to *Moullava,* the publication was valid because he furnished a brief diagnosis. He also referred to the original author of the name, Rhede (1686) and included the genus in his first section Cassiae of the Leguminosae. There is no doubt from both Adanson's description and Rhede's excellent plate and description that the plant is a woody member of the Leguminosae.

Dennstedt renamed Rhede's *Moullava* in his three Indices to the Horti Malabarici. The first index gives the Indian name followed by the scientific name with the volume number and plate reference, the second gives the scientific name with the reference, and the third is to individual volumes giving the Indian and botanical names and some remarks on the plates. He compiled the Indices in order to make the plates more readily available and because Linnaeus had given them only cursory inspection. Dennstedt reidentified Rhede's plates but when he came upon one which he considered new, he assigned a binomial name to it. Hence there are three page references (13, 18 and 32) to *Almeloveenia spinosa,* his new name for Rhede's *Moullava,* named in honor of Theodor Janson ab Almeloveen, one of the co-authors of the Horti. This binomial is not validly published as pointed out to me by Dr. Stafleu and Dr. Rickett (in litt.) because it constitutes publication of a new generic name and specific epithet not accompanied by a description as called for by Article 41 of the Code but by a simple reference to a previous description.

Dalla Torre and Harms probably picked up the name from Durand (1888) where it was listed as *Moullava* Adans. "Incertae Sedis" because it did not appear in Endlicher (1841) nor in Engler and Prantl (1897), two of the works from which the Genera Siphonogamarum was originally compiled. The genus was also listed as a "Genus Incertae Sedis" in the Index Kewensis, again probably following Durand although Pfeiffer (1874), another of the source references, left no doubt that *Moullava* should be included in the Leguminosae.

Why Dalla Torre and Harms assigned the genus to the Gentianaceae is not clear. However, it is desirable to exclude it from this family and to include it properly in the Leguminosae.

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NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM VI*

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

8919. **Felicia** Cassini, Bull. Soc. Philom. Paris **1818**: 165. Nov 1818.
T.: *F. tenella* (Linnaeus) C. G. Nees, Gen. Sp. Ast. 208. 1833 (*Aster tenellus* Linnaeus).
(=) *Detris* Adanson, Fam. **2**: 131, 549. 1763 prim.

Note: *Felicia fragilis* Cassini, Dict. Sci. Nat. **16**: 315 (1820), cited as the type in the Code, is an illegitimate name based on *Aster tenellus* Linnaeus. Cassini did not publish this name in 1818.

8926. **Conyza** Lessing, Syn. Gen. Comp. 203. 1832.
T.: *C. chilensis* C. Sprengel (Novi Prov. 14. 1819) (*typ. cons.*).
(H) *Conyza* Linnaeus, Sp. Pl. 861. 1753 [COMPOS.].
LT.: *C. squarrosa* Linnaeus (vide M. L. Green, Prop. Brit. Bot. 181. 1929; I.C.B.N. 1956: 275).
(=) *Marsea* Adanson, Fam. **2**: 122, 575. 1763.
T.: *Baccharis ivaefolia* Linnaeus.
(=) *Eschenbachia* Moench, Meth. 573. 1794.
T.: *E. globosa* Moench, nom. illeg. (*Erigeron aegyptiacum* Linnaeus).
(=) *Dimorphanthes* Cassini, Bull. Soc. Philom. Paris **1818**: 30. Feb 1818.
(=) *Laennecia* Cassini, Dict. Sci. Nat. **25**: 91. 1822.
T.: *L. gnaphalioides* (Kunth) Cassini (*Conyza gnaphalioides* Kunth).

Note 1: Another homonym: *Conyza* Hill, Brit. Herbal 447 (1756) [COMP.]. Orthographic variants of the Linnean name: *Conysa* Adanson, Fam. **2**: 122 (1763), and *Coniza* Necker, Delic. **2**: 348 (1778).

Note 2: (=) *Fimbrillaria* Cassini, Bull. Soc. Philom. Paris **1818**: 31 (Feb 1818), cannot replace *Conyza* Lessing (1832) because it was a superfluous name for *Marsea* Adanson (1763), both being based on *Baccharis ivaefolia* Linnaeus.

Note 3: Britton and Brown (Ill. Fl. N.U.S. Canada ed. 2. **3**: 444. 1913) list *Baccharis ivaefolia* ('*ivifolia*') as type of *Baccharis*. This would make *Baccharis* identical with *Marsea* Adanson and subject to rejection in favour of *Conyza* Lessing. However, the rejection here of *Marsea* alone implies that the later choice of *B. halimifolia* as the lectotype of *Baccharis* (by M. L. Green, Prop. Brit. Bot. 181. 1929) is now sanctioned and that this name remains available.

8939. **Blumea** A. P. Decandolle, Arch. Bot Guillemin **2**: 514. 1833.
T.: *B. balsamifera* (Linnaeus) A. P. Decandolle, Prodr. **5**: 447. Oct 1836 (*Conyza balsamifera* Linnaeus) (*typ. cons.*).
(H) *Blumia* C. G. Nees, Flora **8**: 152. 14 Mar 1825 [MAGNOL.].
T.: *B. candollii* (Blume) C. G. Nees (*Talauma candollii* Blume).
(=) *Placus* Loureiro, Fl. Cochinch. 496. 1790.
LT.: *P. tomentosus* Loureiro (vide Merrill, Trans. Am. Philos. Soc. ser. 2. **24**: 387. 1935).

Note: Other homonyms: *Blumia* C. Sprengel, Syst. **3**: 12 (1826) [ACTINID.], and *Blumea* H. G. L. Reichenbach, Consp. 209 (1828) [BOMBAC.] (5040).

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* Continued from Taxon 9(4): 124. 1960.

8994. **Cassinia** R. Brown, Trans. Linn. Soc. **12**: 126. 1817 ('1818').
T.: *C. aculeata* (Labillardière) R. Brown (*Calea aculeata* Labillardière) (*typ. cons.*).

(H) *Cassinia* R. Brown ex W. et W. T. Aiton, Hort. Kew. ed. 2. **5**: 184. Dec(?) 1813 [COMPOS.].
T.: *C. aurea* R. Brown ex W. et W. T. Aiton.

9006. **Helichrysum** P. Miller, Gard. Dict. Abr. ed. 4. 1754 ('*Elichrysum*'); corr. Persoon, Syn. Pl. **2**: 414. Sep 1807.
T.: *H. orientale* (Linnaeus) J. Gaertner (*Gnaphalium orientale* Linnaeus) (*typ. cons.*).

(V) *Elichrysum* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

9028. **Angianthus** J. C. Wendland, Coll. Pl. **2**: 31. *t. 48.* 1810.
T.: *A. tomentosus* J. C. Wendland.

(=) *Siloxerus* Labillardière, Nov. Holl. Pl. Spec. **2**: 57. *t. 209.* 1806.
T.: *S. humifusus* Labillardière.

†9039. **Disparago** J. Gaertner, Fruct. **2**: 463. 1791 sero.
T.: *D. ericoides* (P. J. Bergius) J. Gaertner (*Stoebe ericoides* P. J. Bergius).

Note: Conservation superfluous: *Wigandia* Necker, even if validly published by 1791 sem. 2, is unavailable because of *Wigandia* Humboldt, Bonpland et Kunth (*nom. cons.*) (7035).

9054. **Podolepis** Labillardière, Nov. Holl. Pl. Sp. **2**: 56. *t. 208.* 1806.
T.: *P. rugata* Labillardière.

(=) *Scalia* Sims, Bot. Mag. *t. 956.* 1 Sep 1806.
T.: *S. jaceoides* Sims.

9057. **Heterolepis** Cassini, Bull. Soc. Philom. Paris **1820**: 26. Feb 1820.
T.: *Arnica inuloides* Vahl (Symb. Bot. **2**: 91. 1791) [syn. tax.: *H. aliena* (Linnaeus f.) Druce, *Oedera aliena* Linnaeus f.].

(≡) *Heteromorpha* Cassini, Bull. Soc. Philom. Paris **1817**: 12. Jan 1817.

Note: Heterolepis Cassini was a substitute name for *Heteromorpha* Cassini because the author was afraid the latter looked too much like an adjective. *Heteromorpha* was based solely on *Arnica inuloides* Vahl. The circumstance that Cassini cited both *Arnica inuloides* Vahl (1791) and *Oedera aliena* Linnaeus f. (1781) in 1820, and later (Dict. Sci. Nat. **21**: 120 Sep 1821) also under his *H. decipiens* (nom. illeg.) does not make the older *Oedera aliena* the type. The combination under *Heterolepis* of *Arnica inuloides* has not been made as far as we know, and is not proposed here because it would be superfluous in view of the generally accepted taxonomic synonymy with *H. aliena.*

†9059. **Printzia** Cassini, Dict. Sci. Nat. **37**: 463, 488. Dec 1825.
T.: *P. cernua* (P. J. Bergius) Druce (*Inula cernua* P. J. Bergius).

Note: Conservation now superfluous: (≡) *Lioydia* Necker (Elem. **1**: 4. 1790) was not validated until 1837 by Rafinesque Fl. Tell. **2**: 48.

†9091. **Pallenis** (Cassini) Cassini, Dict. Sci. Nat. **23**: 566. Nov 1822.
T.: *P. spinosa* (Linnaeus) Cassini (*Buphthalmum spinosum* Linnaeus).

Note: Conservation superfluous: (≡) *Althalmum* Necker, Elem. **1**: 20 (1790) was not validated until 1891 by O. Kuntze, Rev. Gen. Pl. **1**: 319.

9101. **Lagascea** Cavanilles, Anal. Ci. Nat. **6**: 331. Jun 1803 ('*Lagasca*'); corr. Willdenow, Enum. Pl. Hort. Berol. 941. 1809 sem. 1.
T.: *L. mollis* Cavanilles.

(V) *Lagasca* Cavanilles, Anal. Ci. Nat. **6**: 331. Jun 1803.
(=) *Nocca* Cavanilles, Ic. **3**: 12. 1795.

9147. **Franseria** Cavanilles, Ic. **2**: 78. 1793.
T.: *F. ambrosioides* Rydberg (N. Am. Flora **33**: 36. 15 Sep 1922).

(=) *Gaertneria* Medikus, Philos. Bot. **1**: 45. 1789.
T.: *Ambrosia fruticosa* Medikus (Acta Theod. Palat. **3**: 244. 1775, nom. illeg., *Ambrosia arborescens* P. Miller 1768).

Note 1: The conservation is probably superfluous, but since the date of Medikus' publication is not exactly known we do not know whether *Gaertnera* Schreber, Gen. **1**: 290 (1789 sem. 1), antedates it or not. Gaertner himself replaced the Schreber name by *Hiptage* Gaertner, Fruct. **2**: 169 (1791) (MALPIGH.), which shows perhaps that he regarded Medikus' name as having been published before Schreber's. *Gaertneria* Medikus is a nomen rejiciendum propositum vs. *Gaertnera* Lamarck (1791).

Note 2: Franseria ambrosioides Cavanilles was illegitimate because superfluous on publication: Cavanilles cited *Xanthium fruticosum* Linnaeus f. (itself a superfluous name) and *Ambrosia arborescens* [P. Miller 1768]. The epithet *arborescens* ought to have been adopted for the type-species until *F. arborescens* Brandegee (1903) was published for another type. The epithet *ambrosioides* which had been in continuous use could then be preserved and attributed to the first author after Brandegee (1903) to use it for the Cavanilles type. This was probably Rydberg in North American Flora **33**: 36 (1922).

9150. **Podanthus** Lagasca, Gen. Sp. 24. 1816.
T.: *P. ovatifolius* Lagasca.

(H) *Podanthes* Haworth, Syn. Pl. Succ. 32. 1812 [ASCLEP.].
LT.: *P. pulchra* Haworth (vide Mansfeld, Kew Bull. **1935**: 451).

Note: The conservation implies that *Podanthus* and *Podanthes* are to be treated as homonyms, although there is not much chance of confusion because the genera are not nearly related and both might well have been maintained. The two names are of different gender, which also diminishes the chance of confusion.

9155. **Zinnia** Linnaeus, Syst. Nat. ed. 10. 1189, 1221, 1377. Mai-Jun 1759.
T.: *Z. peruviana* (Linnaeus) Linnaeus (*Chrysogonum peruvianum* Linnaeus).

(=) *Crassina* Scepin, De Acido Veg. 42. 19 Mai 1758.
(=) *Lepia* Hill, Exot. Bot. *t.* 29. 1759.

9166. **Eclipta** Linnaeus, Mant. 157, 286. Oct 1771.
T.: *E. erecta* Linnaeus, nom. illeg. [*Verbesina alba* Linnaeus, *E. alba* (Linnaeus) Hasskarl] (*typ. cons.*).

(=) *Eupatoriophalacron* P. Miller, Gard. Dict. Abr. ed. 4. 1754.

9168. **Selloa** Humboldt, Bonpland et Kunth, Nova Gen. Sp. **4**: ed. fol. 208. 26 Oct 1818; ed. qu. 265. Sep 1820.
T.: *S. plantaginea* Humboldt, Bonpland et Kunth.

(H) *Selloa* C. Sprengel, Novi Prov. 36. 1819 [COMPOS.].
T.: *S. glutinosa* C. Sprengel.

9192. **Wedelia** N. J. Jacquin, Enum. Pl. Carib. 8, 28. Mai 1760.
T.: *W. fruticosa* N. J. Jacquin.

(H) *Wedelia* Loefling, Iter Hisp. 180. 1758 [NYCTAG.].
≡ *Allionia* Linnaeus 1759 (*nom. cons.*) (2348).

9208. **Salmea** A. P. Decandolle, Catal. Monsp. 140. 1813 trim. 1.
T.: *S. scandens* (Linnaeus) A. P. Decandolle (*Bidens scandens* Linnaeus) (*typ. cons.*).

(H) *Salmia* Cavanilles, Ic. **3**: 24. 1795 [LILIAC.].
T.: *S. spicata* Cavanilles.

Note: Another homonym: *Salmia* Willdenow, Ges. Naturf. Freunde Berlin Mag. **5**: 339 (1811) [CYCLANTH.].

9215. **Actinomeris** Nuttall, Gen. **2**: 181. Mai 1818.
T.: *A. squarrosa* Nuttall, nom. illeg. [*Coreopsis alternifolia* Linnaeus, *A. alternifolia* (Linnaeus) A. P. Decandolle] (*typ. cons.*).

(≡) *Ridan* Adanson, Fam. **2**: 130. 598. 1763.

†9222. **Guizotia** Cassini, Dict. Sci. Nat. **59**: 237, 247, 248. Jun 1829.
T.: *C. abyssinica* (Linnaeus f.) Cassini (*Polymnia abyssinica* Linnaeus f.).

Note: Conservation superfluous: *Werrinuwa* Heyne, Tracts on India 49 (1814), is a vernacular name.

†9241. **Balduina** Nuttall, Gen. **2**: 175. Mai 1818.
T.: *B. uniflora* Nuttall (*typ. cons.*).

(?) *Mnesiteon* Rafinesque, Fl. Ludov. 67. 1817.

Note: Conservation superfluous: *Baldwinia* Rafinesque (Feb 1818) and *Balduina* Rafinesque (1819) are not validly published; (≡) *Endorima* Rafinesque (1819) is later; *Mnesiteon* Rafinesque (1817) = *Eclipta* Linnaeus (1771) (9166) and should not be listed here.

9247. **Marshallia** Schreber, Gen. **2**: 810. 1791 sem. 2.
T.: *M. lanceolata* (A. Michaux) Pursh (Fl. Am. Sep. 519. 1814), nom. illeg. [*Persoonia lanceolata* A. Michaux 1803, nom. illeg., *Athanasia obovata* Walter 1788, *M. obovata* (Walter) Beadle et Boyton 1901] (*typ. cons.*).

(H) *Marshallia* J. F. Gmelin, Syst. **2**: 836. 1791 sero. [FLACOURT.].
T.: *M. lagunae* J. F. Gmelin.
≡ *Racoubea* Aublet 1775.

9258. **Layia** Hooker et Arnott ex A. P. Decandolle, Prodr. **7**: 249. Apr 1838.
T.: *L. gaillardioides* (W. J. Hooker et Arnott) A. P. Decandolle (*Tridax gaillardioides* Hooker et Arnott, '*Tridax* ? *galardioides*').

(H) *Layia* Hooker et Arnott, Bot. Beechey Voy. 182. 1833 ('1841') [LEGUM.].
T.: *L. emarginata* Hooker et Arnott.
(=) *Blepharipappus* W. J. Hooker, Fl. Bor. Am. **1**: 316. 1834 ('1840').
LT.: *B. scaber* W. J. Hooker (vide Arnott in Lindley, Nat. Syst. ed. 2. 443. 1836).

Note 1: It is not clear why (=) *Blepharipappus* W. J. Hooker is listed here. Dr. D. D. Keck (in litt.) informs us that there is no chance that anyone would ever combine *Layia* with *Blepharipappus*.

Note 2: The orthography '*galardioides*' resulted from Lamarck's '*Galardia*', a deliberate misspelling of *Gaillardia*; it may therefore be corrected as an orthographic error.

Note 3: Layia Hooker et Arnott was a "nomen provisorium" in 1833, hence its publication was doubtfully valid.

9285. **Villanova** Lagasca, Gen. Sp. 31. 1816.
T.: *V. alternifolia* Lagasca (*typ. cons.*).

(H) *Villanova* Gomez Ortega, Nov. Rar. Pl. Hort. Matrit. Descr. 47. 1797 [COMPOS.].
T.: *V. bipinnatifida* Gomez Ortega.
(=) *Unxia* Linnaeus f., Suppl. 56, 368. 1781 sem. 2.
T.: *U. camphorata* Linnaeus f.

Note: It is doubtful whether *Unxia* Linnaeus f., Suppl. 56, 368 (1781), should be listed here. In the preceding list of nomina conservanda "*Unxia* H.B.K." is listed, but this is a later application of *Unxia* Linnaeus f.

9289. **Thymopsis** Bentham in Bentham et Hooker, Gen. Pl. **2**: 407. Apr 1873.
T.: *T. wrightii* Bentham, nom. illeg. [*Tetranthus thymoides* Grisebach, *T. thymoides* (Grisebach) Urban].

(=) *Thymopsis* Jaubert et Spach, Ill. Pl. Orient. **1**: 72. Oct 1842 [HYPER.].
T.: *T. aspera* Jaubert et Spach.

9291. **Schkuhria** Roth, Catalecta **1**: 116. 1797.
T.: *S. abrotanoides* Roth.

(H) *Sckuhria* Moench, Meth. 566. 1794 [COMPOS.].
T.: *S. dichotoma* Moench, nom. illeg. (*Siegesbeckia flosculosa* L'Héritier).

9322. **Oedera** Linnaeus, Mant. 159, 291. Oct 1771.
T.: *O. prolifera* Linnaeus, nom. illeg. [*Buphthalmum capense* Linnaeus, *O. capensis* (Linnaeus) Druce].

(H) *Oedera* Crantz, Duab. Drac. Arb. Bot. xxx. 1768 [LILIAC.].
T.: *O. dragonalis* Crantz.

9365. **Peyrousea** A. P. Decandolle, Prodr. **6**: 76. Jan 1838.
T.: *P. calycina* (Linnaeus f.) A. P. Decandolle (*Osmites calycina* Linnaeus f.) (*typ. cons.*).

(H) *Peyrousia* Poiret, Dict. Sci. Nat. **39**: 363. Apr 1826 [IRID.].
≡ *Lapeirousia* Pourret 1788.

Note: (≡) *Lapeyrousia* Thunberg, Fl. Cap. ed. J. A. Schultes 700 (1823), is not available because of *Lapeirousia* Pourret, Mém. Acad. Toulouse **3**: 79 (1788).

9382. **Robinsonia** A. P. Decandolle, Arch. Bot. Guillemin **2**: 333. 1833.
T.: *R. macrocephala* Decaisne (Ann. Sci. Nat. ser. 2. **1**: 28. Jan 1834) (*typ. cons.*).

(H) *Robinsonia* Scopoli, Intr. 218. 1777 [QUIINAC.].
≡ *Touroulia* Aublet 1775.

Note: Skottsberg (Nat. Hist. Juan Fernandez **2**: 784. 1951) states that Decandolle had two species before him when he founded the genus, neither of which was then described and neither of which was *R. macrocephala*. Skottsberg suggests to conserve the genus with the type *R. gayana* Decaisne.

9405. **Gynura** Cassini, Dict. Sci. Nat. **34**: 391. Apr 1825.
T.: *G. auriculata* Cassini (Opusc. Phyt. **3**: 100. 1834) (*typ. cons.*).

(=) *Crassocephalum* Moench, Meth. 516. 1794.
T.: *C. cernuum* (Linnaeus f.) Moench (*Senecio cernuus* Linnaeus f.), nom. illeg. [*Senecio rubens* B. Jussieu ex N. J. Jacquin, *C. rubens* (N. J. Jacquin) S. Moore].

Note: Conservation was effected under an erroneous taxonomy, according to Belcher (Kew Bull. **1955**: 455) and S. Moore (Journ. Bot. **50**: 209. 1912), who agree that *Gynura* and *Crassocephalum* are not congeneric. The rejected name can be used anyhow, if considered taxonomically different from *Gynura*.

9412. **Ligularia** Cassini, Bull. Soc. Philom. Paris **1816**: 198. Dec 1816.
T.: *L. sibirica* (Linnaeus) Cassini (Dict. Sci. Nat. **26**: 402. Mai 1823) (*Othonna sibirica* Linnaeus).

(H) *Ligularia* H. A. Duval, Pl. Succ. Horto Alenc. 11. 1809 [SAXIFR.].
T.: *L. sarmentosa* (Linnaeus f.) Duval (*Saxifraga sarmentosa* Linnaeus f.).
≡ *Diptera* Borkausen 1794.
(=) *Senecillis* J. Gaertner, Fruct. **2**: 453. 1791 sero.

†9425. **Dimorphotheca** Moench, Meth. 585. 1794.
T.: *D. pluvialis* (Linnaeus) Moench (*Calendula pluvialis* Linnaeus) (*typ. cons.*).

†9428. **Tripteris** Lessing, Linnaea **6**: 95. 1831.
T.: *T. arborescens* (N. J. Jacquin) Lessing (*Calendula arborescens* N. J. Jacquin) (*typ. cons.*).

Note: Conservation superfluous: *Tripteris* Linnaeus (1753) orth. mut. Thunberg, Dec. Fl. Bras. **1**: 14 (1817), was a misspelling for *Triopteris* Linnaeus, Sp. Pl. 428 (1753), which should not be treated as a homonym of *Tripteris* Lessing. If this conservation stands, it provides a precedent which might create confusion in many other instances.

†9431. **Ursinia** J. Gaertner, Fruct. **2**: 462. 1791 sero.
T.: *U. paradoxa* (Linnaeus) J. Gaertner (*Arctotis paradoxa* Linnaeus).

9434. **Gazania** J. Gaertner, Fruct. **2**: 451. 1791 sero.
T.: *G. rigens* (Linnaeus) J. Gaertner (*Othonna rigens* Linnaeus).

(=) *Meridiana* J. Hill, Veg. Syst. **2**: 121. 1761.

9438. **Berkheya** Ehrhart, Beitr. **3**: 137. 1788.
T.: *B. fruticosa* (Linnaeus) Ehrhart (*Atractylis fruticosa* Linnaeus).

(≡) *Corocodilodes* Adanson, Fam. **2**: 127, 545. 1763 prim.

9439. **Didelta** L'Héritier, Stirp. Nov. 55. Apr 1786.
T.: *D. tetragoniaefolia* L'Héritier.

(=) *Breteuillia* Buchoz, Grand Jard. Univers *t. 62.* 1785.
T.: *B. trianensis* Buchoz.

9446. **Siebera** J. Gay, Mém. Soc. Hist. Nat. Paris **3**: 344. 1827.
T.: *S. pungens* (Lamarck) A. P. Decandolle, Prodr. **6**: 531. Jan 1838 (*Xeranthemum pungens* Lamarck).

(H) *Sieberia* C. Sprengel, Anleit. ed. 2. **2**(1): 282. 20 Apr 1817 [ORCHID.].

Note: Another homonym: *Siebera* Hoppe, Flora **2**: 24 (14 Jan 1819) [CARYOPH.].

9457. **Saussurea** A. P. Decandolle, Ann. Mus. Hist. Nat. [Paris] **16**: 156, 196. 1810 sem. 2.
T.: *S. alpina* (Linnaeus) A. P. Decandolle (*Serratula alpina* Linnaeus) (*typ. cons.*).

(H) *Saussuria* Moench, Meth. 388. [LABIAT.].
T.: *S. pinnatifida* Moench, nom. illeg. (*Nepeta multifida* Linnaeus).

Note: Saussurea Salisbury, Trans. Linn. Soc. **8**: 11 (1807), is a *nomen nudum.*

9464. **Silybum** Adanson, Fam. **2**: 116, 605. 1763 prim.
T.: *S. marianum* (Linnaeus) J. Gaertner, Fruct. **2**: 378. 1791 (*Carduus marianus* Linnaeus) (*typ. cons.*).
(≡) *Mariana* J. Hill, Veg. Syst. **4**: 19. 1762.

†9466. **Galactites** Moench, Meth. 558. 1794.
T.: *G. tomentosa* Moench (*Centaurea galactites* Linnaeus).

Note: Conservation superfluous: (≡) *Lupsia* Necker, Elem. **1**: 71 (1790) was not validated before 1891.

9476. **Amberboa** (Persoon) Lessing, Syn. Compos. 8. 1832.
T.: *A. moschata* (Linnaeus) A. P. Decandolle, Prodr. **6**: 560. 1837 (*Centaurea moschata* Linnaeus) (*typ. cons.*).
(=) *Amberboi* Adanson, Fam. **2**: 117, 516. 1763 prim.
T.: *Centaurea lippii* Linnaeus.
(=) *Chryseis* Cassini, Bull. Soc. Philom. Paris **1817**: 33. Feb 1817.
T.: *C. odorata* Cassini, nom. illeg. (*Centaurea amberboi* P. Miller).
(=) *Lacellia* Viviani, Fl. Lib. Sp. 58. 1824.
T.: *L. libyca* Viviani.

Note 1: Volutaria Cassini, Bull. Soc. Philom. Paris **1816**: 200 (1816), and *Volutarella* Cassini, Dict. Sci. Nat. **44**: 36 (1826), are superfluous names for (=) *Amberboi* Adanson (1763).

Note 2: Amberboi Adanson is certainly based on another type than *Amberboa* ('*Centaurea* **Amberboa* Persoon'), because Persoon did not include *Centaurea lippii* in his '*Centaurea* *(9) *Crupina*'. The citation of *Volutaria* Cassini (1816), however, suggests that *Amberboi* Adanson (1763) is treated for the purposes of the conservation as a taxonomic synonym rather than as a homonym.

9479. **Cnicus** Linnaeus, Sp. Pl. 826. 1753.
T.: *C. benedictus* Linnaeus (*typ. cons.*).

Note: Conservation for lectotypification. Adanson (1763) was the first to take *C. benedictus* out of the genus *Cnicus* (see Fam. **2**: 116, 532. 1763, sub *Carbeni*). It might be said, perhaps, that Gaertner, Fruct. **2**: 385 (1791), was the first to typify *Cnicus* Linnaeus as it is now conserved. The circumstance that Linnaeus' circumscription of *Cnicus* is much wider than that usually accepted at present is irrelevant to the conservation, since with the conservation the type is also conserved.

9483. **Moquinia** A. P. Decandolle, Prodr. **7**: 22. 1838.
T.: *M. racemosa* (C. Sprengel) A. P. Decandolle (*Conyza racemosa* C. Sprengel (*typ. cons.*).
(=) *Moquinia* A. Sprengel, Tent. Suppl. 9. 1828.
T.: *M. rubra* A. Sprengel.

Note: (≡) *Spadonia* Lessing, Syn. Gen. Comp. 99 (1832) (non Fries 1829), is not available.

†9490. **Stifftia** Mikan, Del. Fl. Faun. Bras. *t. 1.* 1820.
T.: *S. chrysantha* Mikan.

Note: Conservation now superfluous: (=) *Augusta* Leandro, Denkskr. Akad. München **7**: 235 (1819), is no longer available because of *Augusta* Pohl (1829) (*nom. cons.*) (8183). *Stifftia* Mikan (1820) was legitimate on publication.

9511. **Schlechtendalia** Lessing, Linnaea **5**: 242. Apr 1830.
T.: *S. luzulaefolia* Lessing.
(H) *Schlechtendalia* Willdenow, Sp. Pl. **3**: 2125. 1803 [COMPOS.].
T.: *S. glandulosa* (Cavanilles) Willdenow (*Willdenowa glandulosa* Cavanilles).

Note: Another homonym: *Schlechtendalia* C. Sprengel, Syst. **4** (cur. post.): 295 (1827) [TILIAC.].

9528. **Gerbera** Cassini, Bull. Soc. Philom. Paris **1817**: 34. Feb 1817 ('*Gerberia*'); corr. C. Sprengel, Syst. **3**: 575. 1826 sem. 1.
T.: *G. linnaei* Cassini, Dict. Sc. Nat. **18**: 460. 1820 ('*Gerberia*') (*typ. cons.*).

(V) *Gerberia* Cassini, Bull. Soc. Philom. Paris **1817**: 34. Feb 1817.
(H) *Gerbera* Boehmer in Ludwig, Def. Gen. Pl. 186. 1760 [COMPOS.].
≡ *Arnica* Linnaeus 1753.
(=) *Aphyllocaulon* Lagasca, Amen. Nat. Esp. **1**: 38. 1811.

Note: Another homonym: *Gerberia* Scopoli, Intr. 286 (1777) [BOMBAC.].

†9529. **Chaptalia** Ventenat, Jard. Cels. *t. 61.* Mai 1802.
T.: *C. tomentosa* Ventenat.

Note: Conservation superfluous: (=) *Thyrsanthema* Necker, Elem. **1**: 6 (1790) was not validated until 1891 by O. Kuntze, Rev. Gen. Pl. **1**: 369.

9545. **Moscharia** Ruiz et Pavon, Prodr. 103. 1794.
T.: *M. pinnatifida* Ruiz et Pavon (Syst. 186. 1798).

(H) *Moscharia* Forskål, Fl. Aeg.-Arab. lxxiv, 158. 1775 [LABIAT.].
T.: *M. asperifolia* Forskål.

†9530. **Krigia** Schreber, Gen. **2**: 532. 1791 (sem. 1).
T.: *K. virginica* (Linnaeus) Willdenow (Sp. Pl. **3**: 1618. 1803) (*Tragopogon virginicum* Linnaeus) (*typ. cons.*).

Note: Conservation superfluous: (=) *Adopogon* Necker, Elem. **1**: 55 (1790) was not validated until 1891 by O. Kuntze, Rev. Gen. Pl. **1**: 304.

9576. **Stephanomeria** Nuttall, Trans. Am. Philos. Soc. ser. 2. **7**: 427. 1841.
T.: *S. minor* (W. J. Hooker) Nuttall (*Lygodesmia minor* W. J. Hooker) (*typ. cons.*).

(=) *Ptiloria* Rafinesque, Atl. Journ. 145. 1832 sero.

9578. **Rafinesquia** Nuttall, Trans. Am. Philos. Soc. ser. 2. **7**: 429. 1841.
T.: *R. californica* Nuttall.

(=) *Rafinesquia* Rafinesque, Fl. Tell. **2**: 96. 1837 trim.1 ('1836') [LEGUM.].
T.: *R. comosa* Rafinesque, nom. illeg. (*Lotus pinnatus* W. J. Hooker).
≡ *Flundula* Rafinesque 1837.

Note: Other homonyms are *Rafinesquia* Rafinesque, Fl. Tell. **3**: 82 (Nov-Dec 1837) [LABIAT.], and *Rafinesquia* Rafinesque, Sylva Tell. 79 (1838) [BIGNON.].

9581. **Podospermum** A. P. Decandolle in Lamarck et Decandolle, Fl. Franç. ed. 3. **4**: 61. 1805 trim. 4.
T.: *P. laciniatum* (Linnaeus) A. P. Decandolle (*Scorzonera laciniata* Linnaeus) (*typ. cons.*).

(≡) *Arachnospermum* F. W. Schmidt, Samml. Phys.-oek. Aufs. **1**: 274. 1795.

9592. **Taraxacum** Zinn, Catal. 425. Mai 1757.
T.: *T. officinale* Wiggers (Prim. Fl. Hols. 56. 1780) (*Leontodon taraxacum* Linnaeus) (*typ. cons.*).

Note: Conservation seems unnecessary because of the earlier date than that in I.C.B.N., but is perhaps necessary for lectotypification.

9604. **Pyrrhopappus** A. P. Decandolle, Prodr. **7**: 144. Mar 1838.
T.: *P. carolinianus* (Walter) A. P. Decandolle (*Leontodon carolinianum* Walter) (*typ. cons.*).

Note: Conservation superfluous: (≡) *Sitilias* Rafinesque, New Fl. **4**: 85, dates from the second half of 1838.

post. 9604. **Thorelia** Gagnepain, Not. Syst. Paris **4**: 18. 1920.
T.: *T. montana* Gagnepain.

(H) *Thorelia* Hance, Journ. Bot. **15**: 268. 1877 [INC. SED.].
T.: *T. deglupta* Hance.

(to be continued)

NEWS AND NOTES

NOMINA FAMILIARUM CONSERVANDA ADDENDUM

The following notes have been submitted to me (*in litt.*) by Dr. G. Buchheim.

In addition to the 'super'-conservation of *Celastraceae,* it may be desirable to apply the same principle to *Actinidiaceae* if that family is united with *Saurauiaceae,* to *Diapensiaceae* on union with *Galacaceae,* to *Pyrolaceae* on union with *Monotropaceae,* and to *Potamogetonaceae* on union with *Juncaginaceae.*

The name *Barringtoniaceae* should be added to the list, since that family is to be maintained in the new edition of the *Syllabus der Pflanzenfamilien,* and the name otherwise must give place to either *Napoleonaceae* or *Belvisiaceae.*

Barringtoniaceae *Lindley,* Veg. Kingdom 754. *cum fig.* 1846.
T.: *Barringtonia* J. R. et G. Forster, nom. cons. [*B. speciosa* J. R. et G. Forster; vide I.C.B.N. 258. 1956. — I.N.G. 39/03785].
B.H. 1: 695. 1865. — *Myrtaceae* tribus *Lecythideae* subtribus *Barringtonieae.*
E.P. 3(7): 30, 33. 1892 (Niedenzu). — *Lecythidaceae* subfam. *Planchonioideae* et *Napoleonoideae.*
Hutch. (1): 303. *fig. 163.* 1959 — *Lecythidaceae,* p.p.

Compensating adjustments to the main entry under *Lecythidaceae* are necessitated by this addition.

A. A. Bullock

HISTORIAE NATURALIS CLASSICA

Historiae naturalis classica, a series of facsimile reprints of classical work in the field of natural history, edited by J. Cramer and H. K. Swann and published by H. R. Engelmann (J. Cramer), Weinheim/Bergstrasse, Germany, Wheldon and Wesley, Ltd., Codicote, Herts. and Hafner Publishing Co., New York.

Tomus II: A. F. W. Schimper, *Plant geography upon a physiological basis,* English translation by W. R. Fisher, Oxford 1903, reprint 1960; 83 pp., 502 figs., 4 maps.

Tomus IV: Gregor Mendel, *Versuche über Pflanzenhybriden,* reprint 1960 from Verhandlungen des naturforschenden Vereins in Brünn, vol. 4, 1865, Brünn 1866, 47 pp.

Tomus V: William Jackson Hooker, *Flora Boreali-Americana* or the Botany of the Northern Parts of British America, London 1829-1840, 2 volumes plus 238 plates in quarto. Reprint 1960, textvolume 351 and 328 pp., incl. a note on the dates of publication of the 12 original parts, atlas volume containing 238 plates.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Belgian Congo

Flore du Congo Belge et du Ruanda-Urundi. Spermatophytes, vol. IX. W. Robyns: *Buxaceae*; P. van der Veken: *Anacardiaceae*; A. Robyns: *Aquifoliaceae*; R. Wilczek: *Celastraceae*; *Hippocrateaceae*; W. Robyns: *Salvadoraceae*; R. Boutique: *Icacinaceae*; L. Hauman: *Sapindaceae*; L. Toussaint: *Melianthaceae*; R. Wilczek & G. M. Schulze: *Balsaminaceae*; C. Evrard: *Rhamnaceae*; J. Dewit & L. Willems: *Vitaceae*; J. Dewit: *Leeaceae.* Bruxelles, 1960. (597 pp., 56 plates, 14 text-figs., 1 map).

Vicia in the U.S.

F. J. Hermann: Vetches of the United States, native, naturalized, and cultivated. Publ. as Agriculture Handbook no. 168 by the U.S. Department of Agriculture, Washington, D.C., 1960. (84 pp., 35 figs., numerous maps; with key and descriptions. Price 40 c).

Flora of Nevada

Contributions toward a flora of Nevada no. 48. C. F. Reed: *Nyctaginaceae* of Nevada. Beltsville, Md., 1960. (53 pp., 18 maps).

Flora of Paraná

J. Angely: Flora do Paraná. 13. *Asclepiadaceae* Paranaenses; 14. *Leguminosae* Paranaenses. Both Curitiba, Paraná, 1959. (22 and 20 pp.).

Cucurbitaceae of India

H. L. Chakravarty: Monograph on Indian *Cucurbitaceae* (taxonomy and distribution). Publ. as Vol. XVII, no. I, of Records of the Botanical Survey of India, Calcutta/Delhi, 1959. (234 pp., 96 figs.; keys to genera and species, descriptions, notes on distribution, figures and maps, and distribution tables. Price Rs. 17.00).

Flora of Belgium

Flore Générale de Belgique. Bryophytes. Vol. II — fasc. 1, by F. Demaret & E. Castagne. Bruxelles, 1959. (111 pp., 38 figs. and maps; introduction, notes on morphology and classification, artificial key to genera; families *Andreaeaceae* — *Ditrichaceae*).

Diatoms of the Netherlands

Diatomeeënflora van Nederland. Vol. 4. Abcoude, Netherlands, 1960. (Contains, besides descriptions and illustrations of species, an account on chemical factors in the environment. Price Dfl. 4.80).

Fodder Trees of Central Australia

G. M. Chippendale & B. R. Jephcott: Topfeed. The fodder trees and shrubs of Central Australia. Publ. as Extension Article no. 5 by the Northern Territory Administration Animal Industry Branch, Alice Springs, 1960. (51 pp., 43 photographs; descriptions of species, with notes on ecology and agricultural importance).

Index of Japanese Type Specimens

Index Speciminum Typicorum in Herbariis Japonensibus. Pars *Bryophyta*, by S. Hattori & A. Noguchi. Tokyo, 1960. (169 pp.; separate lists of *Musci* and *Hepaticae*).

Catalogue of Fungus Cultures

Catálogo de Culturas do I.M.U.R. [Instituto de Micologia, Universidade do Recife]. Publ. as Publicação no. 182 by the I.M.U.R., Recife, Brazil, 1959. (36 pp., with indication of the origin of the cultures).

Catalogue and Statistics of Phanerogams

Catálogo e Estatística dos Gêneros Botânicos Fanerogâmicos. No. 50, 51, 52: *Cyclanthaceae, Pandanaceae, Cycadaceae*, by A. D. Hawkes. Curitiba, Paraná. 1960. (1 p.).

* * *

New Periodicals

Kirkia, Journal of the Federal Herbarium, Salisbury, Rhodesia & Nyasaland. To contain articles on African botany, especially taxonomy, phytogeography, and related fields of study.

The first complete annual volume of the above work will be published towards the end of 1960. The price per volume will be £ 1. 10. 0 and standing orders may now be placed with the Government Printer, P.O. Box 8062, Causeway, Salisbury, S. Rhodesia. 50 reprints of articles will be distributed free to authors and these will be sent out before the appearance of the annual volume and as soon as they are printed, so as to help with the early publications of new taxa. It will also be possible to purchase reprints from the Government Printer.

Articles will be restricted to those dealing with African botanical taxonomy, phytogeography, floristics, or the history of African botanical exploration. Although preference will be given to articles dealing with the botany of the Federation, articles dealing with other parts of Africa will be welcome. The exchange of Kirkia with other publications will be arranged but not usually with journals which do not contain a significant proportion of articles dealing with African botany. Requests for exchange should be addressed to the Editor, Dr. H. Wild, Federal Herbarium, P.O. Box 8100, Causeway, Salisbury, Rhodesia & Nyasaland.

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The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the Life Sciences is September 15, 1960. Proposals received prior to that date will be reviewed at the fall meetings of the Foundation's advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the September 15, 1960 closing date will be reviewed following the spring closing date of January 15, 1961.

Inquiries should be adressed to the National Science Foundation, Washington 25, D.C.

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For a cooperative study of specific and generic relationships in the section Silenoideae (Caryophyllaceae), seed or living plants of species of *Silene, Lychnis,* and *Melandrium* from native habitats in any part of the world are requested. Propagules may be sent to Prof. Arthur R. Kruckeberg, Department of Botany, University of Washington Seattle 5, Washington, U.S.A., or Prof. S. M. Walters, Botany School, Cambridge University, Cambridge, England. Lists of particular desiderata will be sent on request.

REGIONALE KASSENSTELLE DEUTSCHLAND

Dr. W. Domke, unser finanzieller Vertreter in Deutschland, Dr. H. Melchior, als Mitglied des Generalausschusses der I.A.P.T. und ich haben in einem Briefwechsel die Notwendigkeit einer Fortsetzung der deutschen Kassenstelle unseres Vereins diskutiert.

Die Schaffung besonderer regionaler Kassenstellen im Jahre 1950 hatte in erster Linie den Zweck, die Überweisung auswärtiger Geldbeiträge zu vereinfachen wenn nicht sogar überhaupt zu ermöglichen. Was nun die Überweisung der Mitgliedsbeiträge und anderer Zahlungen betrifft, haben sich die Transfer-Verhältnisse gegenüber 1950 wesentlich geändert und vereinfacht. Die Herren Dr. Domke und Dr. Melchior haben mir mitgeteilt, dass heute ein jeder durch irgendeine Bank seinen Mitgliedsbeitrag ohne Schwierigkeit in deutscher oder holländischer Währung überweisen lassen kann. Eine solche Überweisung ist auch auf jedem Postamt in Deutschland per *Auslandspostanweisung* oder auf dem Wege des *Postschecks* in deutscher oder holländischer Währung möglich und zwar ohne alle weiteren Umstände.

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I.A.P.T.,
Lange Nieuwstraat 106,
Utrecht.

Ich bin der Meinung, dass ich im Namen der ganzen deutschen Mitgliederschaft schreibe, wenn ich in diesem Augenblick Herrn Dr. W. Domke recht herzlich danke für seine zehnjährige Arbeit zugunsten des Vereins. Ohne seine Mitarbeit wäre es für die meisten Mitglieder im Anfang nicht möglich gewesen, der I.A.P.T. beizutreten. Die I.A.P.T. Zahlstelle in Deutschland hat immer ausgezeichnet funktioniert, und das Gelingen unseres Unternehmens in Deutschland verdanken wir ohne Zweifel zum grössten Teil Herrn Dr. Domke. Seine Arbeit hat selbstverständlich die Arbeit unserer Zentralstelle auch wesentlich erleichtert. Für diese Mitarbeit sind wir Herrn Domke zu grossem Dank verpflichtet.

F. A. Stafleu,
Schatzmeister, I.A.P.T.

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TAXON

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MORTON EATON PECK

(1871-1959)

Lincoln Constance (Berkeley, Cal.)

After more than a half century of dedicated study of the flora of Oregon, 9th largest of the United States, the distinguished senior botanist died on December 4th at his home in Salem, in his 88th year.

Born in a log cabin built by his father near LaPorte City, Iowa, Peck attended local country and town schools, and was graduated from Cornell College in 1895 with a classical education. However, his interest turned to natural science and finally to botany, doubtless influenced by his father's early encouragement of his love of Nature. As soon as he had completed working his own way through college, Peck commenced teaching at small colleges in Missouri and Iowa. In 1908 he was called to Willamette University, Salem, Oregon, and remained there until he retired in 1941 as chairman of the Department of Biology; during World War II he was recalled briefly to part-time teaching. Almost until the time of his death, however, he continued his taxonomic study and writing.

Peck was a vigorous and devoted field observer and collector. In 1903 he and a friend worked their way to British Honduras, where they collected birds and animals. After returning from this trip to teach at Ellsworth College in Iowa Falls, Peck met Jessie Grant, a student in one of his classes. They were married in 1905, and departed immediately for the Central American colony, where they spent the next three years in adventurous and rigorous research and collecting plants and animals. The Pecks continued their regime of extensive field work when they arrived in Oregon, and almost every summer from more than 40 years found them engaged in botanical exploration of one or more of the remoter areas of the State. In 1924, seeking "something different," they walked the entire length of Oregon's coastline, from Astoria to California, carrying their packs on their backs and collecting as they went. It is not surprising that by 1950 Peck conceded modestly that his coverage of Oregon had been fairly thorough.

The results of this nearly half century of work with the Oregon flora took two principal forms, the building up of an excellent herbarium at Willamette University, and the publication of numerous contributions on the plants of the State, culminating in a masterly "Manual of the Higher Plants of Oregon," which appeared in 1941. The Peck Herbarium, comprising an estimated 40,000 sheets of chiefly Oregon plants,

COMMONWEALTH MYCOLOGICAL
19 AUG 1960

Morton Eaton Peck (1871-1959)

is almost wholly the fruit of the Pecks' own selfless labors, and will long remain the indispensable basis for studies on the plant life of all sections of the State. Peck's written contributions, published by the Iowa Academy of Sciences and the Biological Society of Washington, and in *Rhodora*, *Torreya*, *Madroño*, and *Leaflets of Western Botany*, deal chiefly with new or otherwise interesting plants encountered in his field and herbarium investigations. In 1925 he issued his valuable and pioneering "Preliminary Sketch of the Plant Regions of Oregon" (Amer. Journ. Bot. 12: 33-49, 69-81), in which he attempted to establish and characterize well marked floristic provinces in the exceedingly diverse plant cover of the State. Much of this material is incorporated in the introductory portion of his manual.

With Henry C. Gilbert, he published in 1932 an account of the Myxomycetes of northwestern Oregon, based on the collection of some 1600 numbers of slime-molds, which is also now housed at Willamette University. This paper represented the realization of an interest Peck had nurtured since college days, and which had brought him into friendly contact with Thomas Macbride of the State University of Iowa.

The Oregon botanist's broad cultural interests embraced history, public affairs, and literature, and he was the author of a book of poems, which clearly reveal his sensitivity and passionate love of unspoiled Nature in both her milder and harsher forms. The opening lines from his poem dedicated to the canyon of the Deschutes River exemplify his fine observational and descriptive powers.

> "Over the dull sage tracts the long road wanders and branches
> Now through the streamless hollows, now up by the rim-rock's feet,
> Now slipping off in thin gray threads to the far-scattered ranches,
> Hidden and lost where the low-browed hills and the low sky meet."

Anyone familiar with the "scablands" of the Columbia Basin will respond with a thrill of recognition and nostalgia.

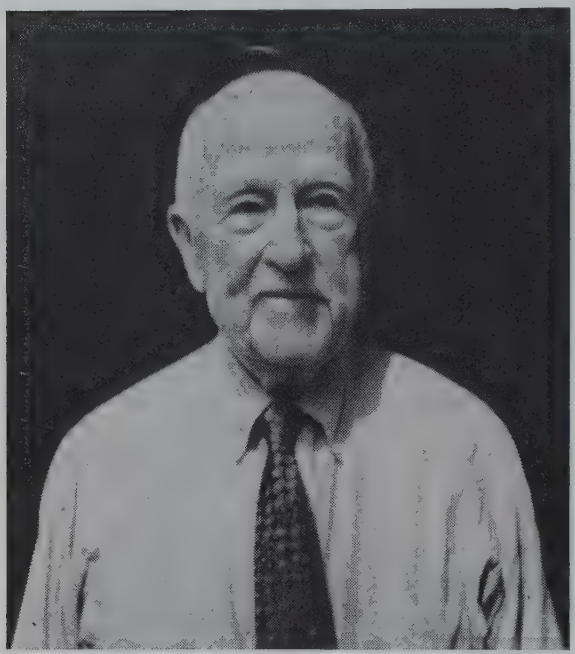
Morton Peck was a modest, kindly, helpful, and tolerant gentleman. In more than 25 years of acquaintanceship, correspondence, and warm friendship with him, I never heard him speak an unkind word about anyone. He was always helpful and encouraging, and would freely make his hard-won material and information available to anyone, no matter how much of a beginner, who asked his assistance. Honors came to him in later life — an Sc. D. from his *alma mater* in 1940, an LL. D. from Willamette in 1955, a citation of merit by the Oregon Federation of Garden Clubs in 1952.

At the time of his death, a revision of the manual had been completed and was awaiting suitable arrangements for publication. It is regrettable that the author did not live to see this ambitious fruition of his post-retirement years. Nevertheless, his work will leave a lasting imprint on the botany of the Pacific Northwest, and those who had the good fortune to know him will not soon forget his gentleness and quiet integrity.

ALEXANDER WILLIAM EVANS

(1868 - 1959)

John R. Reeder (New Haven, Conn.)



Dr. A. W. Evans (1868-1959) at the age of 90

Dr. Alexander W. Evans, Eaton Professor of Botany Emeritus and Curator of the Herbarium Emeritus at Yale University, died on December 6, 1959, at New Haven, Connecticut. Until October 18th of last year, when he fell and broke his hip, he was in good health and worked nearly every day in his room at the Osborn Botanical Laboratory. Following this accident, he submitted to an operation and was making a satisfactory recovery. He was in excellent spirits and was planning soon to leave the hospital, when he contracted pneumonia which lead to his death.

The son of a planing mill operator and youngest of seven children, Alexander W. Evans was born in Buffalo, New York, on May 17, 1868, and spent the first twelve years of his life in that city. After the death of his father in 1880, the family moved to New Haven, where Dr. Evans made his home for the remainder of his life.

Upon graduation from a public high school in New Haven, he entered Yale University where he received a Ph.B. degree in 1890 and an M.D. degree two years later. That he was destined to become a botanist is indicated by the fact that he was collecting and studying liverworts throughout his college years and, moreover, had published three papers on this group of plants by the time he received his medical degree. After serving a two-year internship in the New Haven City Hospital, Dr. Evans left for Germany in the autumn of 1894 to study botany under Professor Kny at the University of Berlin. The following spring he was invited to return to Yale to take charge of botanical instruction and fill the vacancy created by the unexpected death of Professor Daniel Cady Eaton. Appointed first as instructor (1895-1901), then as assistant professor (1901-1906), Dr. Evans was promoted in 1906 to Daniel Cady Eaton Professor, a position he held until his retirement in 1936. It is characteristic of Dr. Evans that even though he already held a doctor's degree (M.D. 1892), soon after his appointment as botanist he began preparing a treatise to present as a Ph.D. dissertation. This second doctorate from Yale was awarded in 1899.

While an active member of the Botany Department at Yale, Dr. Evans' research was concerned primarily with the Hepaticae, and he gained an international reputation as a specialist on these plants. Later he developed an interest in lichens, and his first publication on this group appeared in 1926. During the following decade

his research and publications were concerned with the taxonomy and distribution of both lichens and liverworts. In his later years, however, he confined his studies almost exclusively to lichens, particularly to the genus *Cladonia*, and twenty-five papers dealing with this group were produced under his authorship. These later studies earned for him a reputation as a lichenologist which was at least equal to that which he already enjoyed as an authority on the Hepaticae.

For a number of years after joining the Yale faculty, Dr. Evans spent part of each summer in Europe visiting botanical laboratories and searching for books and other literature which he needed for his studies. In connection with these trips, he attended the second (Paris, 1900), third (Vienna, 1905), and fourth (Brussels, 1910) International Botanical Congresses. In 1953 he was invited to accept the Honorary Presidency of the Section on Lichonology at the VIIIth International Botanical Congress to be held in Paris the following year. He was greatly pleased by this honour and hoped to attend the Congress, but unfortunately was unable to make the trip.

In connection with his botanical studies, Dr. Evans collected extensively in his home state of Connecticut and in some other areas in New England. He also made several short trips to the Carribean Islands, collecting particularly on Puerto Rico, Cuba, and Jamaica. Another excursion took him to Colombia, Venezuela, and Panama. He also made five collecting trips to the state of Florida, U.S.A., the first in 1938, and the others in 1947, 1948, 1949, and 1950. The purpose of these Florida trips was to collect *Cladoniae*, and most of the counties in that state were visited.

Dr. Evans was a gentle kindly person and rather retiring, but with a warm personality and a fine sense of humor. His former students remember him as a very fine teacher. Although always much preoccupied with his studies, he nevertheless generously gave advice when it was requested, but this was almost never offered unsolicited. He had a gift for writing concise English, and his associates frequently sought his council regarding more precise modes of expression in their own writings. He was a meticulous worker, and his manuscripts were models of perfection. He served on the editorial board for the Bulletin of the Torrey Botanical Club from 1907-1934, and for a decade (1914-1924) was editor-in-chief. For a number of years he was also an associate editor of The Bryologist.

Of considerable pride to Dr. Evans were two honors which he received long after he had become an emeritus professor. On the occasion of the centennial of the Sheffield Scientific School, in 1947, Yale University awarded him an honorary Sc.D. degree, and in 1956, as part of their 50th anniversary celebration, the Botanical Society of America named him among the fifty most outstanding living American Botanists.

DE CANDOLLE'S LEGUMINEUSES

F. A. Stafleu (Utrecht) and W. T. Stearn (London)

In the *Annales des Sciences naturelles* 4: 90-103 (Jan. 1825) Augustin Pyramus de Candolle published diagnoses of 14 new genera and 52 new species of Leguminosae to safeguard the nomenclature later to be employed in his review of the family as a whole in the *Prodromus* vol. 2 (Nov. 1825). The concise and formal style of the *Prodromus* did not permit discussion of the principles and the general background of the classification adopted there, so de Candolle also published an informal commentary, 'renfermant les développemens et les preuves de l'exposition abrégée

de la famille qui se trouve dans le *Prodromus*', illustrated with 71 engraved plates by Heyland and entitled *Mémoires sur la Famille des Légumineuses* (4to, Paris). This is dated '1825' on the title page, which was issued with the first part, but the last page before the plates is dated '1826'. Judging from the contemporary notices of parts in the Paris book-trade journal *Bibliographie de France* (cited below as B.F.), only the first two parts appeared in 1825, the first coming before volume 2 of the *Prodromus*, the rest later.

From these notices, a series of reviews by Raspail in Férussac's *Bulletin des Sciences naturelles* (cited below as B.S.N.) and particulars of parts 1-7 in their original wrappers kindly supplied by Dr. Richard S. Cowan, it is evident that publication was as follows:

Part	pp.	plates	date of publ.	sources
1	1-64	1, 4, 5, 9, 36, 40, 42, 46	October 1825	B.F. 1825: 724 (29 Oct. 1825) B.S.N. 7: 70 (Jan. 1826)
2	65-128	8, 10, 19, 21, 50, 56, 59, 66	late Nov. 1825 (or early Dec.)	B.F. 1825: 853 (14 Dec. 1825) B.S.N. 7: 226 (Feb. 1826)
3	129-184	2, 12-14, 21bis, 31, 35, 37	January 1826	B.F. 1826: 66 (28 Jan. 1826) B.S.N. 7: 333 (Mar. 1826)
4	185-248	3, 11, 18, 20, 22, 25, 30, 39	February 1826	B.F. 1826: 127 (1 Mar. 1826) B.S.N. 7: 427 (Apr. 1826)
5	249-312	6, 7, 15-17, 23, 24, 26, 27, 29	March 1826	B.F. 1826: 282 (5 Apr. 1826) B.S.N. 8: 217 (June 1826)
6	313-376	36, 41, 43, 47, 52, 54	late Apr. 1826 (or early May)	B.F. 1826: 412 (10 May 1826) B.S.N. 8: 217 (June 1826)
7	377-440	28, 38, 44, 45, 48, 49, 51, 67	late May 1826 (or early June)	B.F. 1826: 524 (14 June 1826) B.S.N. 8: 52 (Sept. 1826)
8	441-515	32-34, 53, 55, 57, 58, 60-65, 68-70 2 tabl.	late Dec. 1826 (or early Jan. 1827)	B.F. 1827: 27 (13 Jan. 1827) B.S.N. 10: 253 (Feb. 1827)

These reviews make clear that the monthly scheme of publication, announced in various journals (e.g. *Flora (Regensburg)* 8: 192; 28 March 1826), was more or less adhered to, except for the last part.

The page numbers 347-355 appear twice, the first with text on the Hédysarées, the second with text on the Viciées and Phaséolées.

On the inside of the wrappers the publisher issued the following statement: 'Pour éviter les plus longs rétards de la part des graveurs, les planches des Légumineuses paraitront sans observer l'ordre de leurs numéros'. This irregularity is confirmed by Raspail's reviews of parts 1-4, wherein the plate-numbers are listed, and by Cowan's information on the contents of parts 1-7. Whereas, however, Cowan's copy of part 1 contains plate 42, Raspail lists this part as containing plate 44 (apparently a misprint for 42). Plate 36 seems to have been issued twice.

In many works of this period — cf. Stearn in *J. Soc. Bibl. Nat. Hist.* 1: 55 (1937), *J. Arnold Arb.* 24: 484 (1943), *Fl. Males.* I. 4: ccx (1953), *Taxon* 5: 155 (1956) — the numbering of the plates bears little relation to their sequence of issue. Citation of a given plate by a contemporary does not necessarily mean that the next relevant to it had been published at the same time. It is also unwise in the absence of other evidence, to affirm dogmatically, for example, that part 1 of a work contained plates 1-8 from a statement that this part contained 8 plates. Botanical bibliography is pitted with such traps for the inexperienced.

According to the evidence above the issue of plates ran as follows:
1 (pt. 1), 2 (pt. 3), 3 (pt. 4), 4 (pt. 1), 5 (pt. 1), 6 (pt. 5), 7 (pt. 5-6), 8 (pt. 2), 9 (pt. 1), 10 (pt. 2), 11 (pt. 4), 12 (pt. 3), 13 (pt. 3), 14 (pt. 3), 15 (pt. 5), 16 (pt. 5), 17 (pt. 5), 18 (pt. 4), 19 (pt. 2), 20 (pt. 4), 21 (pt. 2), 21bis (pt. 3), 22 (pt. 4), 23 (pt. 5), 24 (pt. 5), 25 (pt. 4), 26 (pt. 5), 27 (pt. 5), 28 (pt. 7), 29 (pt. 5), 30 (pt. 4), 31 (pt. 3), 32 (pt. 8), 33 (pt. 8), 34 (pt. 8), 35 (pt. 3), 36 (pt. 1, 5-6), 37 (pt. 3), 38 (pt. 7), 39 (pt. 4), 40 (pt. 1), 41 (pt. 6), 42 (pt. 1), 43 (pt. 6), 44 (pt. 7), 45 (pt. 7), 46 (pt. 1), 47 (pt. 6), 48 (pt. 7), 49 (pt. 7), 50 (pt. 2), 51 (pt. 7), 52 (pt. 6), 53 (pt. 8), 54 (pt. 6), 55 (pt. 8), 56 (pt. 2), 57 (pt. 8), 58 (pt. 8), 59 (pt. 2), 60 (pt. 8), 61 (pt. 8), 62 (pt. 8), 63 (pt. 8), 64 (pt. 8), 65 (pt. 8), 66 (pt. 2), 67 (pt. 7), 68 (pt. 8), 69 (pt. 8), 70 (pt. 8).

ON NOMINA ANAMORPHOSIUM—I

M. A. Donk (The Hague)*

Many fungus species may develop more than one 'state'. In the Asco- and Basidiomycetes each of the states of a single species may bear a name of its own. In species of these two classes with a 'complete' and completely known 'life cycle' of more than one state, the state bearing asci or basidia is referred to as the perfect, in contrast to the other(s) commonly called the imperfect state(s). If we term the latter a n a m o r p h o s e s, the names given to them may be known as n o m i n a a n a m o r p h o s i u m (singular, nomen anamorphosis).

As soon as the connection of one or more states with the perfect one is known, the main reason for admitting nomina anamorphosium is removed and the logical act is to call them all together, henceforward, by a single name. The Code (Art. 59) prescribes that this 'collective' name must be the correct name given to the perfect state, even if one or more of the nomina anamorphosium are of prior date. This is the o n l y character in which nomina anamorphosium differ technically from

* Rijksherbarium, Leiden.

other names: their priorability (legitimacy) is restricted vis-à-vis the name(s) of the perfect state of the same taxon. If a choice has to be made they automatically become nomina rejicienda in respect to the name(s) given to the perfect state.

Yet, it should be stipulated that the Code expressly tolerates the use of nomina anamorphosium even if the corresponding perfect state is known. It follows that in such cases they must be applied exclusive of the perfect state. Usually no difficulties arise in this connection, but this is not always so as is clear from the discussion which follows. In any case the strange situation exists that one fungus species may legally bear more than one correct specific name at the same time. Obviously, in these instances, we are, in fact, dealing with one true specific name and one or more pseudo-specific ones. The latter belong to the conventional system of nomenclature for imperfect fungi (cf. Donk, *1960*).

As stated above, it is only in one regard that nomina anamorphosium are not on a par with other names. They are otherwise not excepted from any rules of nomenclature. For example, if a nomen anamorphosis is a validly published earlier homonym, the homonym of a later date is impriorable (illegitimate), even if it is the name of a 'complete' taxon (of whatever phyllum of plants) and based on a perfect state.

Example 1. — The name *Rhizoctonia solani* Kuhn (1858) is a nomen anamorphosis based on the so-called rhizoctonia state of a species the perfect state of which was later called *Hypochnus solani* Prill. & Delacr. (1891), a name introduced quite independently of *R. solani*. If one combines the two states as a consequence of the conviction that they belong to the same species, and if one prefers to apply a single denomination to that species, the earlier one of the two names (*Rhizoctonia solani*) drops out of competition and the correct name for the 'complete' species is *Hypochnus solani*, or a recombination based on that name—unless another name like *Hypochnus cucumeris* Frank (1883) is regarded as an earlier synonym of *Hypochnus solani*. The original description accompanying the latter name covers the 'complete' fungus, that is, both the perfect and the rhizoctonia state.

Recombinations of a nomen anamorphosis are of course also nomina anamorphosium, because recombining does not change the type (Arts. 54—56). The type in these instances is an imperfect state, and it remains unaltered even if an author makes a recombination with a 'perfect' generic name. The same applies to mere name changes.

Example 2. — *Rhizoctonia microsclerotia* Matz (1917) is based on a rhizoctonia state and was introduced without the knowledge of the basidial (i.e. perfect) state. When Weber (*1939:* 565) established the existence of the latter he proceeded to introduce the recombination "*Corticium microsclerotia* (Matz), n. comb. / Syn. *Rhizoctonia microsclerotia* Matz / Phytopath. **7**: 110—117. 1917", quoting Matz's original description and continuing to add, "This should be amended to include the following . . . [follow additional characters, *inter alia* of the basidiospores]." [1] It is quite clear in this case, in my opinion, that only a new combination was introduced, *Corticium microsclerotia* (Matz) G. F. Weber (1939), and that Weber did not succeed in giving the 'complete' species a correct name, since he did not take up a name based on the perfect state, or on that state plus the imperfect one(s). The combination '*Corticium microsclerotia*' is nothing but another nomen anamorphosis.

Further developments in connection with this second example are as follows. Some years later Rogers (*1943:* 113, 115) listed *Corticium microsclerotia* (Matz) G. F. Weber as "*Corticium microsclerotia* Weber . . . 1939, nomen nudum", and asserted that "since [Weber's] account of *Corticium microsclerotia* lacks the validating Latin diagnosis, Weber's name must technically be accounted a nomen nudum."

[1] *Rhizoctonia* DC. per Fr. is a generic nomen anamorphosis, while *Corticium* Fr. is based on a perfect state.

This view induced Weber (*1951:* 728) to supply a Latin description in order to validate the name "*Corticium microsclerotia* (Matz) n. comb." [!], and also to indicate a type specimen.

What happened must, in my opinion, be interpreted as follows. Weber (1939) published the recombination '*Corticium microsclerotia*' as a new combination with *Rhizoctonia microsclerotia* as basionym. The new combination was undoubtedly validly published by the reference to the description of the validly published basionym (Arts. 32, 42): it certainly is not a nomen nudum. As concluded above under Example 2 another nomen anamorphosis was published and the 'complete' fungus did not receive a correct name. Neither was this situation improved in 1951 when the Latin description was supplied: the latter is to be regarded as a purely supplementary one, that might have been written in any language. The indication of a type is to be valued as an erroneous statement, if Weber's cited specimen is not one of Matz's original specimens.

Weber should not have published a new combination, but a new name altogether, for a new taxon: he might have chosen '*Corticium microsclerotia* G. F. Weber', a mode especially mentioned in Art. 59; he also might have chosen an epithet other than 'microsclerotia'. It is too late now to make up for it by proposing the name '*Corticium microsclerotia* John Doe', for that would merely introduce a later homonym of Weber's recombination and hence would be illegitimate. Therefore the 'complete' fungus, which I believe to be a good species, is still in need of a correct name.

The way in which the preceding example and many other ones as well have been treated supports the thesis that a current opinion is that when somebody supplies a description of (or inclusive of) the perfect state while introducing a recombination with a 'perfect' generic name, the recombination amounts to the introduction of a new name for a new taxon. The basis for this view is apparently the following sentence of Art. 59:

"The author who first describes a perfect state may adopt the specific epithet applied to the corresponding imperfect state, but his binomial for the perfect state is to be attributed to him alone, and is not be regarded as a transfer."

One should be careful here not to confuse recombinations (or isonyms in general, that is, new names for old taxa) and new names for new taxa. In my opinion we are definitely not allowed to interpret retroactively the undoubted recombination '*Corticium microsclerotia* (Matz) G. F. Weber' as a new name for a new taxon merely because the taxon was extended to cover also the basidiferous state on the basis of the quoted provision, if the latter is not reworded to include that aim: technically Weber 'misapplied' the recombination when including the perfect state. What the quoted part of Art. 59 conveys is, rather, that if Weber had introduced a new name like '*Corticium microsclerotia* G. F. Weber, *sp. nov.*' he would have failed to validate it in 1939 only because no Latin description was supplied. The following are examples of what I think is the correct application of the above quotation from Art. 59 in order to remain consistent with the Code as it stands.

Example 3. — For some time the perfect state of *Candelospora ilicicola* Hawley apud Rea & Hawley was not known. Then it was obtained by Boedijn & Reitsma (*1950:* 57) in the form of perithecia in culture and this perfect state got a new name, "*Calonectria ilicicola* Boedijn & Reitsma nov. spec." It may be pointed out that the two authors at the same time introduced as well the correct name for the imperfect state alone, "*Cylindrocladium ilicicola* (Hawley) Boedijn & Reitsma *nov. comb.*" They were quite free to choose an epithet other than 'ilicicola' for the perfect state, but apparently they felt bound by the suggestion quoted above and laid down in Art. 59.

The type of the nomen anamorphosis was found in Ireland on *Ilex;* the type of the

name given to the perfect state was isolated from "cultures ... isolated from potato tubers ... [at] Bogor [Java]". Personally I would not have used the epithet 'ilicicola' for a name based on this particular type, but this is purely a matter of taste.

Example 4. — *Heliscus lugdunensis* Sacc. & Therry is the name of an imperfect state of an aquatic fungus from which Webster (*1959*) was able to obtain the perfect state. The latter he described as a new species, *Nectria lugdunensis* J. Webster ("sp. nov."); he did *not* recombine the specific epithet of the name given to the imperfect state.

The other interpretation has been defended by Bisby (*1944:* 282-283; *1945:* 88) who presumably gave the impuls to the incorporation of the above quoted provision of Art. 59.

"If for example, a perfect state is described and named '*Mycosphaerella Aleuritidis* (Miyake) Ou ..., syn. [the imperfect state] *Cercospora Aleuritis* Miyake ...' I take it that the binomial should be cited '*M. Aleuritidis* Ou ...', since the type specimen of the name of a *Cercospora* cannot (or at least should not) be made the type specimen of the name of a *Mycosphaerella* unless the specimen is shown to bear the perfect state." [1]—Bisby (*1944:* 282-283). All the same Bisby (*1945:* 88) conceded that, "Some, however, hold that *M. Aleuritidis* (Miyake) Ou is the correct citation, since Ou definitely based his name on Miyake's type, the ascigerous state of which he thought he had found."

Finally, attention is drawn to the fact that a provision, proposed by Bisby & Stevenson (*1950*) to introduce the reverse of the already quoted provision, will also be found in the Code (Art. 59):

"When not already available, binomials for imperfect states may be proposed at the time of publication of [the name of] a perfect state or later, and may contain either the specific epithet [of the name] applied to the perfect stage or any other epithet available."

I hardly can imagine that the publishing of a 'perfect' name as a counterpart to an 'imperfect' one (or the reverse) is best performed in the cumbersome manner advocated by Bisby and others. Given the name of an imperfect state, let us say, *Cercospora aleuritidis* Miyake, one will have, first to make a recombination, *Mycosphaerella aleuritidis* (Miyake) Ou; then, secondly, reject it and its type, to introduce the new name *Mycosphaerella aleuritidis* Ou [non *M. aleuritidis* (Miyake) Ou], based on a new type; and thirdly, because the new name is illegitimate as a later homonym, declare the new name legitimate on the basis of some ruling in the Code (still to be incorporated, if really wanted). It would have been more straightforward if '*Mycosphaerella aleuritidis* Ou, *sp. nov.*' had at once been published as a counterpart to '*Cercospora aleuritidis* Miyake'.

The aim of the present paper is to demonstrate that two interpretations exist regarding the subject discussed, and that only one of these interpretations is really fully backed by the Code as it stands. If mycologists definitely want to admit both interpretations, a change in the present formulation of Art. 59 (accompanied with examples) will be needed. I understand that Mr. C. F. Deighton, Kew, will take up the subject in this connection.

References

The following titles have been cited by their dates printed in italics.

Bisby, G. R. (1944) *in* Mycologia **36**; (1945). An introduction to the taxonomy and nomenclature of fungi. Kew. — Bisby, G. R. & J. A. Stevenson [1950]. Art. 57. Proposal for modification. Mimeographed. — Boedijn, K. B. & J. Reitsma (1950) *in* Reinwardtia **1**. — Donk, M. A. (1960) *in* Taxon **10**: 103—104. — Rogers, D. P. (1943) *in* Farlowia **1**. — Weber, G. F. (1939) *in* Phytopathology **29**; (1951) *in* Mycologia **43**. — Webster, J. (1959) *in* Trans. Brit. mycol. Soc. **42**: 322—327.

[1] The last clause is not at all self-evident and in my opinion incorrect as will be discussed in a following note.

THE LECTOTYPE SPECIES SELECTIONS OF BRITTON AND BROWN AND THE STANDARD SPECIES OF HITCHCOCK AND GREEN

Keith Jones (Ottawa) *

The second volume of the first edition of Linnaeus' "Species Plantarum", produced as a facsimile by the Ray Society (1959), is prefaced by a useful discussion on the selection of lectotype species. Another valuable feature is an index to Classes, Genera, and Species of the two volumes in which is included a list of the principal sources of lectotype designations for Linnean genera. The designations of each author are indicated by appropriate symbols in the index.

In both preface and index greater emphasis is placed on the list of "Species Lectotypicae Generum Linnaei" of Hitchcock and Greene (1929) than those of other authors. This has been done because Hitchcock and Greene gave reasons for their choice of lectotypes, and further, their list achieved greater significance when taken as a basis for action by the International Botanical Congress of 1930.

The existence of this list can be a source of confusion today unless its exact relevance to taxonomy is understood and for this reason it is desirable to consider its history.

Hitchcock and Greene submitted their list of 1159 lectotype species to the Nomenclature Section of the Fifth International Botanical Congress (1929) as an appendix to the following proposal:

"The application of the Linnean generic names to be determined by means of specified Standard-species."

The Report of the Proceedings of this Congress records that a detailed examination of this proposal was not possible at that time and the list was therefore referred to the special committee for the nomenclature of Phanerogams and Pteridophytes. Although no decision on its acceptance was made at this Congress the list was printed as part 1 of a Supplement to the International Rules published in 1935.

The proposal was discussed again at the sixth International Congress (1936) when Dr. Sprague suggested to the Nomenclature section that they pass a resolution that "the standard species (species lectotypicae) of Linnean generic names printed in the International Rules, ed. 3 pp. 139-143, be adopted by botanists unless there is clear reason for the rejection of any species in favour of another." He declared that any changes considered desirable should be communicated to the secretary of the special committee for the Phanerogamae and Pteridophyta. The motion was carried by a show of hands. The list was again published as a supplement to the Rules after this Congress.

It will be noted that the acceptance of the list in these terms did not imply that it was to be binding since provision was made for changes.

The list was discussed once more at the Seventh International Congress (1950) but the discussion terminated when Dr. Sprague pointed out that it had been accepted at the previous congress. On this occasion however the list was not printed with the Rules nor did it appear in those produced after the Paris Congress (1954).

At no time has any modification been made to the articles or recommendations in the Rules to accommodate the implications of the accepted list. Indeed today its existence can be completely overlooked particularly by the newcomer to taxonomy but also by others who do not have occasion to refer to pre-war editions of the Rules. Consequently many will accept the guide to the determination of types which

* Plant Research Institute Contribution no. 28.

appears as paragraph e. page 295, in Appendix IV of the 1956 edition of the Rules. This suggests that "the *first* choice of a lectotype should be followed by subsequent workers unless it can be shown that the choice does not fit the original description as well as another of the original elements, specimens, species, higher taxa etc." Nowhere in the Rules is there a reference to the accepted list of standard species, the status of which would appear to be considerably weakened by the above suggestion. It is relevant to note that although Hitchcock and Greene made many lectotype designations which agreed with those of earlier authors, there remain at least ten per cent which differ from previous selections.

Seen in the light of the guiding principle Hitchcock and Greene's list is subject to modification on two counts i.e. (a) prior lectotype designation by earlier workers, and (b) considerations of taxonomy; both of course will interact. It is difficult to see how the list could ever be regarded as a standard one or in any way as a "starting point" for the typification of Linnean genera. Of greater use would be a compilation of the first lectotype designations which could be modified only on the grounds of taxonomic suitability. The index in the facsimile of "Species Plantarum" fulfills this purpose to a degree and will provide a far better reference point than the list of Standard species.

The present situation is therefore confusing and it would be an advantage if the status of Hitchcock and Greene's list is decided upon in a more positive manner at a Botanical Congress.

A greater familiarity with the significant sources of lectotype species designations would undoubtedly be of advantage in taxonomy. For this reason I append a list of the designations of Britton and Brown which were made in the second edition of their Illustrated Flora of the Northern United States and Canada (1913).

The list is complete apart from the selections for the Linnean genera up to 1753. These are indicated in the facsimile of Species Plantarum referred to above.

Britton and Brown have designated their lectotype species in various ways the most emphatic of which is to place "Type species:" in italics before the name of the species selected. In many instances however, the choice is indicated in the genus description by such words as ".... and the following is the generic type." or ".... the first of these is the type species." etc. Lectotypes designated in such manner are enclosed in brackets in my list, although it seems highly probable that they were intended to be as positive as the former category. Sometimes there is merely the statement that the genus is monotypic; in such cases the described species is automatically type. Where this is so an asterisk is placed after the species name in the list. The numbers preceeding the generic names show in which of the three volumes of the flora the genus has been described, and on which page the lectotype designation has been made.

1.487 *Abama* Adans. .....
Anthericum ossifragum L.

1.63 *Abies* (Tourn.) Hill .....
Pinus Picea L., *Abies Picea* (L.) Lindley

2.33 *Abronia* Juss. .....
A. californica Gmel.

2.521 *Abutilon* (Tourn.) Mill .....
(*A. Abutilon* (L.) Rusby.)

2.330 *Acacia* (Tourn.) Mill .....
Mimosa scorpioides L.

1.230 *Acamptoclados* Nash. .....
A. sessilispicus (Buckley) Nash. *

3.459 *Acanthospermum* Schrank .....
A. brasilium Schrank

3.34 *Acerates* Ell. .....
A. longifolia (Michx.) Ell.

2.331 *Acuan* Medic. .....
Mimosa virgata L.

3.457 *Adenocaulon* Hook. .....
(*A. bicolor* Hook.)

2.143 *Adlumia* Raf. .....
Adlumia fungosa (Ait.) Greene *

3.205 *Afzelia* J. G. Gmel. .....
Anonymos cassioides Walt.

3.208 *Agalinis* Raf. .....
A. palustris Raf. (*Gerardia purpurea* L.)
3.111 *Agastache* Clayt. .....
Hyssopus nepetoides L.
3.323 *Agoseris* Raf. .....
A. cuspidata (Pursh.) D. Dietr.
1.283 *Agropyron* J. Gaertn. .....
A. cuspidata (Pursh) D. Dietr.
2.446 *Ailanthus* Desf. .....
(*A. glandulosa* Desf.)
2.331 *Albizzia* Durazz. .....
(*A. julibrissin* Durazz.)
2.170 *Alliaria* Adans. .....
(*A. Alliaria* (L.) Britton)
2.31 *Allionia* Loefl.; L. .....
A. violacea L.
3.79 *Allocarya* Greene .....
A. lithocarya (A. Gray) Greene
1.612 *Alnus* (Tourn.) Hill .....
A. vulgaris Hill
2.291 *Amelanchier* Medic. .....
Mespilus amelanchier L.
1.212 *Ammophila* Host. .....
Arundo arenaria L.
2.652 *Ammoselinum* T. & G. .....
(*A. Popei* T. & G.)
2.509 *Ampelopsis* Michx. .....
A. cordata Michx.
3.370 *Amphiachyris* (DC.) Nutt. .....
(*A. dracunculoides* (DC.) Nutt.)
1.164 *Amphicarpon* Raf. .....
Milium Amphicarpon Pursh
1.119 *Amphilophis* Nash. .....
Andropogon Torreyanus Steud.
3.84 *Amsinckia* Lehm. .....
(*A. lycopsioides* Lehm.)
3.20 *Amsonia* Walt. .....
A. Tabernaemontana Walt.
3.453 *Anaphalis* DC. .....
A. nubigena (Wall.) DC.
1.125 *Anastrophus* Schlecht. .....
Paspalum platyculmum Thouar.
1.24 *Anchistea* Presl. .....
A. virginica (L.) Presl. *
1.501 *Androstephium* Torr. .....
A. coeruleum (Scheele) Greene
2.598 *Angora* Spach .....
A. Douglasiana Spach
3.237 *Anisostichus* Bureau. .....
Bignonia capreolata L.
3.448 *Antennaria* Gaertn. .....
A. dioica (L.) Gaertn.
1.491 *Anticlea* Kunth. .....
A. sibirica (L.) Kunth.
2.215 *Antiphylla* Haw. .....
Saxifraga oppositifolia L.
2.29 *Anychia* Michx. .....
A. dichotoma Michx.
2.29 *Anychiastrum* Small .....
A. riparium (Chapm.) Small
3.310 *Apargia* Scop. .....
A. incana Scop.
1.213 *Apera* Adans. .....
Agrostis Spica-venti L.
3.401 *Aphanostephus* DC. .....
A. ramosissimus DC.
1.574 *Aplectrum* Nutt. .....
A. hyemale (Muhl.) Torr. *
2.175 *Arabidopsis* (DC.) Schur. .....
Arabis Thaliana L.
1.201 *Arctagrostis* Griseb. .....
Colpodium latifolium R. Br.
2.258 *Argentina* Lam. .....
A. vulgaris Lam.
1.442 *Arisaema* Mart. .....
Arum nepenthoides Wall.
2.163 *Armoracia* Gaertn. .....
(*A. Armoracia* (L.) Britton)
3.309 *Arnoseris* Gaertn. .....
A. minima (L.) Dumort. *
2.290 *Aronia* Medic. .....
(*A. arbutifolia* (L.) Ell.)
1.220 *Arrhenatherum* Beauv. .....
Avena elatior L.
2.247 *Aruncus* (L.) Adans. .....
(*A. Aruncus* (L.) Karst.)
1.295 *Arundinaria* Michx. .....
A. macrosperma Michx.
3.33 *Asclepiodora* A. Gray .....
A. viridis (Walt.) A. Gray
2.83 *Asmina* Adans. .....
(*A. triloba* (L.) Dunal.)
1.214 *Aspris* Adans. .....
Aira praecox L.
2.215 *Astilbe* Hamilt. .....
A. rivularis D. Don.
1.532 *Atamosco* Adans. .....
Amaryllis Atamosco L.
1.227 *Atheropogon* Muhl. .....
A. apludoides Muhl.
1.30 *Athyrium* Roth. .....
A. Filix-foemina (L.) Roth.
1.38 *Azolla* Lam. .....
A. filiculoides Lam.

2.344 *Baptisia* Vent. .....
Sophora alba L.
2.176 *Barbarea* R. Br. .....
B. vulgaris R. Br.
3.16 *Bartonia* Muhl. .....
B. tenella Willd.
2.698 *Batodendron* Nutt. .....
B. arboreum (Marsh.) Nutt.

2.115 *Batrachium* S. F. Gray .....
B. hederaceum (L.) S. F. Gray
1.228 *Beckmannia* Host. .....
Phalaris erucaeformis L.
2.135 *Benzoin* Fabric. .....
Laurus Benzoin L.
2.502 *Berchemia* Neck. .....
(*B. scandens* (Hill) Trelease)
2.539 *Bergia* L. .....
B. capensis L.
3.463 *Berlandiera* DC. .....
B. texana DC.
2.153 *Berteroa* DC. .....
(*B. incana* (L.) DC.)
2.655 *Berula* Hoffm. .....
B. erecta (Huds.) Coville *
2.142 *Bicuculla* Adans. .....
Fumaria Cucullaria L.
1.671 *Bistorta* Adans. .....
Polygonum Bistorta L.
1.556 *Blephariglottis* Raf. .....
B. albiflora Raf.
3.134 *Blephilia* Raf. .....
B. ciliata (L.) Raf.
3.513 *Boebera* Willd. .....
(*B. papposa* (Vent.) Rydb.)
1.637 *Boehmeria* Jacq. .....
B. ramiflora Jacq.
3.403 *Boltonia* L'Her. .....
B. glastifolia (Hill) L'Her.
3.477 *Borrichia* Adans. .....
(*B. frutescens* (L.) DC.)
1.3 *Botrychium* Sw. .....
B. punaria (L.) Sw.
1.227 *Bouteloua* Lag. .....
nil
3.434 *Brachyactis* Ledeb. .....
B. ciliata Ledeb.
3.401 *Brachychaeta* T. & G. .....
B. sphacelata (Raf.) Britton *
1.190 *Brachyelytrum* Beauv. .....
B. erectum (Schreb.) Beauv. *
1.190 *Brachyelytrum* Beauv. .....
B. erectum (Schreb.) Beauv. *
2.417 *Bradburya* Raf. .....
B. scandens Raf.
3.192 *Bramia* Lam. .....
B. indica Lam.
2.76 *Brasenia* Schreb. .....
B. Schreberi Gmel. *
1.677 *Brunnichia* Banks. .....
(*B. cirrhosa* Banks.)
1.231 *Bulbilis* Raf. .....
B. dactyloides (Nutt.) Raf. *
2.719 *Bumelia* Sw. .....
B. retusa Sw.
2.158 *Bursa* (Siegesb.) Weber .....
(*Bursa Bursa-pastoris* (L.) Britton)
2.76 *Cabomba* Aubl. .....
C. aquatica Aubl.
2.195 *Cakile* (Tourn.) Mill. .....
Bunias Cakile L.
1.207 *Calamagrostis* Adans. .....
Arundo Calamagrostis L.
1.212 *Calamovilfa* Hack. .....
Arundo brevipilis Torr.
2.564 *Calceolaria* Loefl. .....
Viola Calceolaria L.
2.130 *Calcyocarpum* Nutt. .....
C. Lyoni (Pursh) Nutt. *
2.516 *Callirhoë* Nutt. .....
C. digitata Nutt.
2.694 *Calluna* Salisb. .....
C. vulgaris (L.) Salisb. *
1.507 *Calochortus* Pursh .....
C. elegans Pursh
2.132 *Calycanthus* L. .....
C. floridus L.
2.157 *Camelina* Crantz .....
C. sativa (L.) Crantz.
1.26 *Camptosorus* Link .....
(*C. rhizophyllus* (L.) Link)
1.224 *Campulosus* Desv. .....
Chloris monostachya Michx.
2.143 *Capnoides* (Tourn.) Adans. .....
Fumaria sempervirens L.
1.222 *Capriola* Adans. .....
Panicum Dactylon L.
2.166 *Carara* Medic. .....
C. Coronopus (L.) Medic.
2.686 *Cassiope* D. Don. .....
(*C. tetragona* (L.) D. Don)
2.79 *Castalia* Salisb. .....
C. pudica Salisb.
1.615 *Castanea* (Tourn.) Hill .....
C. vulgaris Hill
3.214 *Castilleja* Mutis. .....
C. fissifolia L.f.
1.245 *Catabrosa* Beauv. .....
Aira aquatica L.
3.238 *Catalpa* Scop. .....
Bignonia Catalpa L.
2.437 *Cathartolinum* Reichb. .....
Linum catharticum L.
2.128 *Caulophyllum* Michx. .....
(*C. thalictroides* (L.) Michx.)
2.660 *Celeri* Adans. .....
(*C. graveolens* (L.) Britton)
3.1 *Centaurium* Hill .....
Gentiana Centaurium L.
2.274 *Cercocarpus* H.B.K. .....
C. fothergilloides H.B.K.
2.629 *Cerefolium* (Rivin.) Haller .....
Scandix Cerefolium L.
3.176 *Chaenorrhinum* (DC.) Lange .....
Antirrhinum minus L.

1.164 *Chaetochloa* Scribn. .....
Setaria longiseta Beauv.
3.403 *Chaetopappa* DC. .....
(*C. asteroides* DC.)
2.683 *Chamaecistus* Oeder. .....
C. procumbens (L.) Kuntze *
2.337 *Chamaecrista* Moench. .....
C. nictitans (L.) Moench.
1.65 *Chamaecyparis* Spach .....
C. spaeroidea Spach
2.687 *Chamaedaphne* Moench. .....
C. calyculata (L.) Moench. *
1.489 *Chamaelirium* Willd. .....
C. luteum (L.) A. Gray *
2.589 *Chamaenerion* (Tourn.) Adans. .....
Epilobium angustifolium L.
2.664 *Chamaepericlymenum* Graebn. .....
C. suecicum (L.) Asch. & Graebn.
2.263 *Chamaerhodos* Bunge .....
C. altaica (L.) Bunge
3.163 *Chamaesaracha* A. Gray .....
C. coronopus (Dunal) A. Gray
2.462 *Chamaesyce* S. F. Gray .....
C. maritima S. F. Gray
1.33 *Cheilanthes* Sw. .....
C. micropteris Sw.
2.172 *Cheirinia* Link .....
C. cheiranthoides (L.) Link
2.672 *Chimaphila* Pursh .....
C. maculata (L.) Pursh
2.704 *Chiogenes* Salisb. .....
C. hispidula (L.) T. & G. *
1.225 *Chloris* Sw. .....
Agrostis cruciata L.
3.375 *Chondrophora* Raf. .....
(*C. nudata* (Michx.) Britton)
2.223 *Chondrosea* Haw. .....
C. pyramidalis Haw.
1.489 *Chrosperma* Raf. .....
C. muscaetoxicum (Walt.) Kuntze *
3.372 *Chrysopsis* (Nutt.) Ell. .....
C. gossypina (Michx.) Ell.
3.376 *Chrysothamnus* Nutt. .....
C. pumilis Nutt.
2.90 *Cimicifuga* L. .....
C. foetida L.
3.548 *Cirsium* (Tourn.) Mill. .....
Carduus heterophyllus L.
2.343 *Cladrastis* Raf. .....
C. lutea (Michx. f.) Koch *
2.7 *Cladothrix* Nutt. .....
(*C. lanuginosa* Nutt.)
2.198 *Cleomella* DC. .....
C. mexicana DC.
1.514 *Clintonia* Raf. .....
C. borealis (Ait.) Raf.
1.552 *Coeloglossum* Hartm. .....
C. viride (L.) Hartm.
2.645 *Coelopleurum* Ledeb. .....
C. Gmelini (DC.) Ledeb.
2.631 *Cogswellia* Spreng. .....
C. villosa (Raf.) Spreng.
1.111 *Coleorachis* Brongn. .....
nil
3.363 *Coleosanthus* Cass. .....
C. Cavanillesii Cass.
3.188 *Collinsia* Nutt. .....
C. verna Nutt.
3.64 *Collomia* Nutt. .....
(*C. linearis* Nutt.)
1.639 *Comandra* Nutt. .....
C. umbellata (L.) Nutt.
1.586 *Comptonia* Banks. .....
C. peregrina (L.) Coulter. *
2.635 *Conioselinum* Hoffm. .....
C. tataricum Hoffm.
3.191 *Conobea* Aubl. .....
C. aquatica Aubl.
3.235 *Conopholis* Wallr. .....
(*C. americana* (L. f.) Wallr.)
2.174 *Conringia* (Heist.) Adans. .....
Brassica orientalis L.
1.533 *Cooperia* Herb. .....
(*C. Drummondii* Herb.)
2.88 *Coptis* Salisb. .....
C. trifolia (L.) Salisb.
1.574 *Corallorrhiza* (Haller) Chatelain ....
C. trifida Chatelain
2.479 *Corema* Don .....
(*C. album* Don)
2.570 *Coryphantha* (Engelm.) Lemaire ....
Mamillaria sulcata Engelm.
2.484 *Cotinus* Adans. .....
(*C. Cotinus* (L.) Sargent)
2.321 *Cotoneaster* Medic. .....
Mespilus Cotoneaster L.
2.462 *Cnidoscolus* Pohl. .....
C. hamosus Pohl.
3.466 *Crassina* Scepin .....
Chrysogonum peruvianum L.
2.198 *Cristatella* Nutt. .....
C. erosa Nutt.
2.539 *Crocanthemum* Spach. .....
C. carolinianum (L.) Spach.
2.456 *Crotonopsis* Michx. .....
C. linearis Michx.
2.38 *Crunocallis* Rydb. .....
C. Chamissonis (Ledeb.) Rydb. *
3.79 *Cryptantha* Lehm. .....
C. glomerata Lehm.
1.32 *Cryptogramma* R. Br. .....
C. acrostichoides R. Br.
3.146 *Cunila* L. .....
(*C. origanoides* (L.) Britton)
3.292 *Cyclanthera* Schrad. .....
C. pedata Schrad.

2.16 *Cycloloma* Moq. .....
C. atriplicifolium (Spreng.) Coult. *
3.175 *Cymbalaria* Medic. .....
(*C. Cymbalaria* (L.) Wettst.)
3.308 *Cymbia* (T. & G.) Standley .....
C. occidentalis (Nutt.) Standley *
1.441 *Cymophyllus* Mackenzie .....
C. Fraseri (Andr.) Mackenzie *
2.644 *Cymopterus* Raf. .....
(*C. acaulis* (Pursh) Rydberg)
2.730 *Cynoctonum* J. G. Gmel. .....
C. sessilifolium J. G. Gmel.
2.633 *Cynomarathrum* Nutt. .....
(*C. Nuttallii* (A. Gray) Coult. & Rose)
2.646 *Cynosciadium* DC. .....
(*C. pinnatum* DC.)
2.664 *Cynoxylon* Raf. .....
(*C. floridum* (L.) Raf.)
3.307 *Cynthia* D. Don .....
C. virginica (L.) D. Don
2.485 *Cyrilla* Garden .....
(*C. racemiflora* L.)
1.573 *Cytherea* Salisb. .....
C. bulbosa (L.) House. *
2.564 *Cubelium* Raf. .....
C. concolor (Forst.) Raf. *
1.459 *Cuthbertia* Small .....
C. rosea (Vent.) Small

1.229 *Dactyloctenium* Willd. .....
Cynosurus aegyptius L.
1.220 *Danthonia* DC. .....
Avena spicata L.
2.262 *Dasiphora* Raf. .....
(*D. fructicosa* (L.) Rydb.)
3.10 *Dasystephana* (Reneal) Adans. .....
Gentiana asclepiadea L.
3.206 *Dasystoma* Raf. .....
D. aurea Raf.
2.580 *Decodon* J. F. Gmel. .....
D. verticillatus (L.) Ell. *
2.233 *Decumaria* L. .....
D. barbara L. *
2.682 *Dendrium* Desv. .....
(*D. buxifolium* (Berg.) Desv.)
1.456 *Dendropogon* Raf. .....
(*D. usneoides* (L.) Raf.)
1.14 *Dennstaedtia* Bernh. .....
D. flaccida (Forst.) Bernh.
2.630 *Deringa* Adans. .....
D. canadensis (L.) Kuntze *
1.215 *Deschampsia* Beauv. .....
Aira caespitosa L.
3.244 *Diapedium* Konig. .....
Justica chinensis L.
3.39 *Dichondra* Forst. .....
D. repens Forst.
1.340 *Dichromena* Michx. .....
D. leucocephala Michx.
2.469 *Dichrophyllum* Kl. & Garcke .....
(*D. marginatum* (Pursh) Kl. & Garcke)
2.579 *Didiplis* Raf. .....
D. diandra (Nutt.) Wood. *
3.283 *Diervilla* (Tourn.) Mill. .....
(*D. Diervilla* (L.) MacM.)
2.129 *Diphylleia* Michx. .....
(*D. cymosa* Michx.)
1.236 *Diplachne* Beauv. .....
Festuca fascicularis Lam.
2.194 *Diplotaxis* DC. .....
D. tennuifolia (L.) DC.
1.517 *Disporum* Salisb. .....
D. pullum Salisb.
1.249 *Distichlis* Raf. .....
D. maritima Raf.
2.456 *Ditaxis* Vahl. .....
D. fasciculata Vahl.
3.443 *Doellingeria* Nees .....
D. umbellata (Mill.) Nees
2.421 *Dolicholus* Medic. .....
D. minimus (L.) Medic.
2.23 *Dondia* Adans. .....
Chenopodium altissimum L.
3.473 *Dracopsis* Cass. .....
D. amplexicaulis (Vahl.) Cass. *
2.262 *Drymocallis* Fourr. .....
D. rubricaulis Fourr.
1.17 *Dryopteris* Adans. .....
Polypodium Filix-mas L.
2.259 *Duchesnea* J. E. Smith .....
(*D. indica* (Andr.) Focke.
1.340 *Dulichium* L. C. Richard .....
D. arundinaceum (L.) Britton *
1.261 *Dupontia* R. Br. .....
D. Fisheri R. Br.
3.240 *Dyschoriste* Nees .....
D. depressa Nees

3.475 *Echinacea* Moench. .....
E. purpurea (L.) Moench.
2.568 *Echinocereus* Engelm. .....
E. viridiflorus Engelm.
1.133 *Echinochloa* Beauv. .....
Panicum Crus-galli L.
1.95 *Echinodorus* Rich. .....
Alisma rostratum Nutt.
2.619 *Echinopanax* Decne. & Pl. .....
E. horridum (J. C. Smith) Decne. & Planch. *
1.310 *Eleocharis* R. Br. .....
Scirpus palustris L.
3.222 *Elephantella* Rydb. .....
E. groenlandica (Retz.) Rydb.
1.228 *Eleusine* Gaertn. .....
Cynosurus coracanus L.

3.154 *Elsholtzia* Willd. .....
E. cristata Willd.
3.502 *Endorima* Raf. .....
Balduina uniflora Nutt.
3.464 *Engelmannia* T. & G. .....
E. pinnatifida T. & G. *
2.131 *Epibaterium* Forst. .....
E. pendulum Forst.
1.238 *Eragrostis* Beauv. .....
Briza Eragrostis L.
2.88 *Eranthis* Salisb. .....
(*E. hyemalis* (L.) Salisb.)
3.536 *Erechtites* Raf. .....
(*E. hieracifolia* (L.) Raf.)
1.113 *Erianthus* Michx. .....
Anthoxanthum giganteum Walt.
2.653 *Erigenia* Nutt. .....
E. bulbosa (Michx.) Nutt. *
1.124 *Eriochloa* H.B.K. .....
E. distachya H.B.K.
1.173 *Eriocoma* Nutt. .....
Stipa membranacea Pursh.
1.648 *Eriogonum* Michx. .....
E. tomentosum Michx.
1.234 *Erioneuron* Nash .....
Uralepsis pilosa Buckley
2.430 *Erodium* L'Her. .....
E. crassifolium Soland.
2.192 *Eruca* (Tourn.) Mill. .....
(*E. Eruca* (L.) Britton)
2.688 *Eubotrys* Nutt. .....
E. racemosa (L.) Nutt.
2.654 *Eulophus* Nutt. .....
(*E. americanus* Nutt.)
2.20 *Eurotia* Adans. .....
(*E. ceratoides* (L.) C. E. Meyer)
3.7 *Eustoma* Salisb. .....
E. silenifolium Salisb.
3.398 *Euthamia* Nutt. .....
E. graminifolia (L.) Nutt.
3.42 *Evolvulus* L. .....
E. nummularius L.

1.671 *Fagopyrum* Gaertn. .....
F. tatariucum Gaertn.
2.419 *Falcata* Gmel. .....
F. caroliniana (Walt.) Gmel.
2.117 *Ficaria* (Rupp.) Huds. .....
F. verna Huds.
3.446 *Filago* Loefl. .....
F. pygmaea L.
2.248 *Filipendula* (Tourn.) Mill. .....
Spiraea Filipendula L.
1.14 *Filix* Adans. .....
Polypodium bulbiferum L.
1.320 *Fimbristylis* Vahl. .....
F. acuminata Vahl.
1.550 *Fissipes* Small .....
F. acaulis (Ait.) Small *
3.504 *Flaveria* Juss. .....
F. chilensis Gmelin
2.441 *Floerkea* Willd. .....
(*F. prosperpinacoides* Willd.)
2.643 *Foeniculum* Mill. .....
(*F. Foeniculum* (L.) Karst.)
2.728 *Forestiera* Poir. .....
(*F. acuminata* (Michx.) Poir.)
2.234 *Fothergilla* Murr. .....
F. Gardeni Murr. *
3.15 *Frasera* Walt. .....
(*F. carolinensis* Walt.)
2.7 *Froelichia* Moench. .....
Gomphrena interrupta L.
1.337 *Fuirena* Rottb. .....
F. umbellata Rottb.

3.342 *Gaertneria* Med. .....
Xanthium fruticosum L. f.
3.511 *Gaillardia* Foug. .....
G. pulchella Foug.
2.419 *Galactia* P. Br. .....
Glycine Galactia L.
1.551 *Galeorchis* Rydb. .....
G. spectabilis (L.) Rydb. *
3.502 *Galinsoga* Cav. .....
(*G. parviflora* Cav.)
2.606 *Galpinsia* Britton .....
G. Hartwegi (Benth.) Britton
2.693 *Gaultheria* Kalm. .....
(*G. procumbens* L.)
2.605 *Gaurella* Small. .....
G. canescens (Torr.) Small *
2.695 *Gaylussacia* H.B.K. .....
G. buxifolia H.B.K.
2.730 *Gelsemium* Juss. .....
(*G. sempervirens* (L.) Ait. f.)
1.542 *Gemmingia* Fabr. .....
G. chinensis (L.) Kuntze *
2.376 *Geoprumnon* Rydb. .....
G. crassicarpum (Nutt.) Rydb.
3.446 *Gifola* Cass. .....
(*G. germanica* (L.) Dumort.)
3.59 *Gilia* R. & P. .....
G. laciniata R. & P.
2.135 *Glabraria* L. .....
G. tersa L.
2.141 *Glaucium* Mill. .....
(*G. Glaucium* (L.) Karst.)
3.36 *Gonolobus* Michx. .....
G. laevis Michx.
2.527 *Gordonia* Ellis .....
(*G. Lasianthus* L.)
1.262 *Graphephorum* Desv. .....
Aira melicoides Michx.
3.371 *Grindelia* Willd. .....
G. inuloides Willd.
2.239 *Grossularia* (Tourn.) Mill. .....
Ribes Grossularia L.

3.370 *Gutierrezia* Lag. .....
G. linearifolia Lag.

1.552 *Gymnadeniopsis* Rydb. .....
G. nivea (Nutt.) Rydb.

2.340 *Gymnocladus* Lam. .....
G. dioica (L.) Koch *

1.225 *Gymnopogon* Beauv. .....
Andropogon ambiguus Michx.

1.531 *Gyrotheca* Salisb. .....
G. tinctoria (Walt.) Salisb. *

3.15 *Halenia* Borck. .....
H. sibirica Borck.

2.117 *Halerpestes* Greene .....
(*H. Cymbalaria* (Pursh) Greene)

2.722 *Halesia* Ellis .....
(*H. carolina* L.)

3.535 *Haploesthes* A. Gray .....
H. Greggii A. Gray *

2.659 *Harperella* Rose .....
H. nodosa Rose

2.686 *Harrimanella* Coville .....
H. Stelleriana (Pall.) Coville

2.602 *Hartmannia* Spach .....
H. faux-gaura Spach

3.135 *Hedeoma* Pers. .....
H. pulegioides (L.) Pers.

1.190 *Heleochloa* Host. .....
H. alopecuroides Host.

1.95 *Helianthum* Engelm. .....
Echinodorus parvulus Engelm.

3.467 *Heliopsis* Pers. .....
H. laevis Pers.

1.339 *Hemicarpha* Nees & Arn. .....
H. Isolepis Nees

2.101 *Hepatica* (Rupp.) Mill. .....
Anemone Hepatica L.

1.463 *Heteranthera* R. & P. .....
H. reniformis R. & P.

3.372 *Heterotheca* Cass. .....
(*H. subaxillaris* (Lam.) Britton and Rusby)

1.577 *Hexalectris* Raf. .....
(*H. spicata* (Nutt.) Barnhart.)

1.643 *Hexastylis* Raf. .....
Asarum arifolium Michx.

1.579 *Hicoria* Raf. .....
Juglans alba L.

2.635 *Hipposelinum* (Dalerech) Britton & Rose .....
H. Levisticum (L.) Britton and Rose *

2.338 *Hoffmanseggia* Cav. .....
H. falcaria Cav.

2.386 *Homalobus* Nutt. .....
H. caespitosus Nutt.

1.168 *Homalocenchrus* Mieg. .....
Phalaris oryzoides L.

2.58 *Honkenya* Ehrh. .....
H. peploides (L.) Ehrh.

2.359 *Hosackia* Dougl. .....
H. bicolor Dougl.

2.710 *Hottonia* Boerh. .....
(*H. Palustris* L.)

2.541 *Hudsonia* L. .....
H. ericoides L.

2.220 *Hydatica* Neck. .....
Saxifraga leucanthemifolia Michx.

2.85 *Hydrastis* Ellis; L. .....
(*H. canadensis* L.)

3.193 *Hydrotrida* Willd. .....
Herpestis obovata Poepp.

1.533 *Hymenocallis* Salisb. .....
H. littoralis Salisb.

3.505 *Hymenopappus* L'Her. .....
H. scabiosaeus L'Her.

3.510 *Hymenoxys* Cass. .....
Hymenopappus anthemoides Juss.

2.675 *Hypopitys* Adans. .....
Monotropa Hypopitys L.

1.294 *Hystrix* Moench. .....
Elymus Hystrix L.

2.158 *Hutchinsia* R. Br. .....
H. petraea (Willd.) R. Br.

1.564 *Ibidium* Salisb. .....
Ophrys spiralis J. E. Smith

3.196 *Ilysanthes* Raf. .....
I. riparia Raf.

2.178 *Iodanthus* T. & G. .....
I. pinnatifidus (Michx.) Steud. *

3.444 *Ionactis* Greene .....
(*I. linariifolius* (L.) Greene)

2.431 *Ionoxalis* Small .....
I. violacea (L.) Small

2.8 *Iresine* P. Br. .....
(*I. paniculata* (L.) Kuntze)

3.104 *Isanthus* Michx. .....
I. brachiatus (L.) B.S.P. *

3.380 *Isopappus* T. & G. .....
(*I. divaricatus* (Nutt.) T. & G.)

1.561 *Isotria* Raf. .....
(*I. verticillata* (Willd.) Raf.)

2.129 *Jeffersonia* B. S. Barton .....
(*J. diphylla* (L.) Pers.)

1.482 *Juncoides* Adans. .....
Juncus pilosus L.

2.442 *Kallotroemia* Scop. .....
Tribulus maximus L.

2.685 *Kalmiella* Small .....
(*K. hirsuta* (Walt.) Small)

2.387 *Kentrophyta* Nutt. .....
(*K. montana* Nutt.)

3.175 *Kickxia* Dumort. .....
Antirrhinum Elatine L.

2.599 *Kneiffia* Spach
K. glauca (Michx.) Spach
1.351 *Kobresia* Willd.
K. Scirpina Willd.
2.16 *Kochia* Roth.
K. Scoparia (L.) Roth.
1.245 *Koeleria* Pers.
Poa nitida Lam.
3.141 *Koellia* Moench.
K. capitata Moench.
2.153 *Koniga* Adans.
(*K. maritima* (L.) R. Br.)
1.247 *Korycarpus* Zea
K. arundinaceus Zea
2.523 *Kosteletzkya* Presl.
K. hastata Presl.
2.340 *Krameria* Loefl; L.
K. Ixine L.
2.373 *Kraunhia* Raf.
(*K. frutescens* (L.) Greene)
3.306 *Krigia* Schreb.
K. virginica (L.) Willd. *
3.364 *Kuhnia* L.
K. eupatorioides L.
1.296 *Kyllinga* Rottb.
K. monocephala Rottb.

1.455 *Lachnocaulon* Kunth.
Eriocaulon anceps Walt.
3.365 *Lacinaria* Hill
Serratula squarrosa L.
3.77 *Lappula* (Rivin.) Moench.
L. Myosotis Moench.
1.60 *Larix* (Tourn.) Adans.
L. Larix (L.) Karst.
2.603 *Lavauxia* Spach
L. triloba (Nutt.) Spach
2.189 *Leavenworthia* Torr.
L. aurea Torr.
2.542 *Lechea* Kalm.
L. minor L.
3.230 *Lecticula* Barnhart.
Utricularia resupinata B. D. Greene
1.586 *Leitneria* Chapm.
nil
2.576 *Lepargyraea* Raf.
Hippophaë argentea Pursh.
3.236 *Leptamnium* Raf.
L. virginianum (L.) Raf. *
3.204 *Leptandra* Nutt.
(*L. virginica* (L.) Nutt.)
2.216 *Leptasea* Haw.
Saxifraga aizoides L.
3.442 *Leptilon* Raf.
L. divaricatum (Michx.) Raf.
1.229 *Leptochloa* Beauv.
Cynosurus virgatus L.
3.62 *Leptodactylon* H. & A.
L. californicum H. & A.

1.124 *Leptoloma* Chase
(*L. cognatum* (Schultes) Chase)
1.282 *Lepturus* R. Br.
L. repens R. Br.
2.402 *Lespedeza* Michx.
L. sessiliflora Michx.
2.154 *Lesquerella* S. Wats.
L. Lescurii (A. Gray) S. Wats.
3.434 *Leucelene* Greene
(*L. ericoides* (Torr.) Greene)
1.496 *Leucocrinum* Nutt.
L. montanum Nutt. *
2.687 *Leucothoë* D. Don
L. axillaris (Lam.) D. Don
3.163 *Leucophysalis* Rydb.
L. grandiflora (Hook.) Rydb. *
2.648 *Lilaeopsis* Greene
L. lineata (Michx.) Greene *
2.39 *Limnia* (L.) Haw.
L. sibirica (L.) Haw.
1.107 *Limnobium* L. C. Richard
L. Bosci L. C. Richard
1.554 *Limnorchis* Rydb.
L. hyperborea (L.) Rydb.
2.718 *Limonium* (Tourn.) Mill.
Statice Limonium L.
3.176 *Linaria* (Tourn.) Mill.
Antirrhinum Linaria L.
1.571 *Liparis* L. C. Richard
L. Loeselii (Willd.) L. C. Rich.
1.339 *Lipocarpha* R. Br.
Hypaelytrum argenteum Vahl.
3.97 *Lippia* Houst.
L. americana L.
3.250 *Littorella* L.
(*L. uniflora* (L.) Ascherson)
1.535 *Lophiola* Ker
L. americana (Pursh) Coville *
1.96 *Lophotocarpus* T. Durand
Sagittaria calycina Engelm.
1.24 *Lorinseria* Presl.
L. areolata (L.) Presl. *
2.585 *Ludwigiantha* Small
(*L. arcuata* (Walt.) Small)
3.168 *Lycopersicon* Mill.
(*L. Lycopersicon* (L.) Karst.)
3.322 *Lygodesmia* D. Don
Prenanthes juncea Pursh
1.9 *Lygodium* Sw.
L. scandens (L.) Sw.
1.555 *Lysias* Salisb.
L. bifolia (L.) Salisb.
1.556 *Lysiella* Rydb.
L. obtusata (Pursh) Richards *

3.435 *Machaeranthera* Nees
M. tanacetifolia (H.B.K.) Nees
1.647 *Macounastrum* Small
(*M. islandicum* (L.) Small)

2.694 *Mairania* Neck. .....
M. alpina (L.) Desv. *
3.314 *Malacothrix* DC. .....
M. californica DC.
1.570 *Malaxis* Soland. .....
M. spicata Sw.
2.288 *Malus* Mill. .....
Pyrus Malus L.
2.519 *Malvastrum* A. Gray .....
M. coccineum (Pursh.) A. Gray
1.534 *Manfreda* Salisb. .....
Agave virginica L.
3.555 *Mariana* Hill .....
M. mariana (L.) Hill *
1.347 *Mariscus* (Hall.) Zinn .....
Schoenus Mariscus L.
3.502 *Marshallia* Schreb. .....
M. Schreberi Gmel.
1.11 *Matteuccia* Todaro .....
(*M. Struthiopteris* (L.) Todaro)
1.450 *Mayaca* Aubl. .....
M. fluviatilis Aubl.
3.193 *Mecardonia* R. & P. .....
M. ovata R. & P.
3.113 *Meehania* Britton .....
M. cordata (Nutt.) Britton *
3.500 *Megalodonta* Greene .....
(*M. Beckii* (Torr.) Greene)
2.605 *Megapterium* Spach .....
M. Nuttallianum Spach
2.395 *Meibomia* Heist. .....
Hedysarum canadense L.
2.352 *Melilotus* (Tourn.) Mill. .....
Trifolium Melilotus officinalis L.
2.681 *Menziesia* J. E. Smith .....
M. ferruginea J. E. Smith
2.608 *Meriolix* Raf. .....
(*M. serrulata* (Nutt.) Walp.)
3.82 *Mertensia* Roth. .....
M. pulmonarioides Roth.
3.536 *Mesadenia* Raf. .....
M. atriplicifolia (L.) Raf.
3.292 *Micrampelis* Raf. .....
(*M. lobata* (Michx.) Greene)
3.197 *Micranthemum* Michx. .....
M. orbiculatum Michx.
2.217 *Micranthes* Haw. .....
M. semipubescens Haw.
3.59 *Microsteris* Greene .....
M. gracilis (Dougl.) Greene
3.363 *Mikania* Willd. .....
M. hastata (L.) Willd.
1.112 *Miscanthus* Anderss. .....
Eulalia japonica Trin.
2.523 *Modiola* Moench. .....
M. caroliniana (L.) G. Don *
3.114 *Moldavica* (Tourn.) Adans. .....
Dracocephalum Moldavica L.
2.671 *Moneses* Salisb. .....
M. uniflora (L.) A. Gray *
2.17 *Monolepis* Schrad. .....
M. trifida Schrad.
2.674 *Monotropsis* Schwein. .....
(*M. odorata* Ell.)
2.333 *Morongia* Britton .....
Schrankia aculeata Willd.
1.184 *Muhlenbergia* Schreb. .....
M. Schreberi Gmel.
1.232 *Munroa* Torr. .....
(*M. squarrosa* (Nutt.) Torr.)
1.510 *Muscari* Mill. .....
Hyacinthus botryoides L.
2.222 *Muscaria* Haw. .....
Saxifraga muscoides Wulf.
2.643 *Musineon* Raf. .....
Seseli divaricatum Pursh
3.334 *Nabalus* Cass. .....
N. trifoliatus Cass.
2.715 *Naumburgia* Moench. .....
N. thyrsiflora (L.) Duby *
3.64 *Navarretia* R. & P. .....
N. involucrata R. & P.
1.121 *Nazia* Adans. .....
Cenchrus racemosus L.
2.77 *Nelumbo* (Tourn.) Adans. .....
Nymphaea Nelumbo L.
1.541 *Nemastylis* Nutt. .....
N. coelestina Nutt.
2.490 *Nemopanthus* Raf. .....
N. mucronata (L.) Trelease *
3.67 *Nemophila* Nutt. .....
N. phacelioides Nutt.
2.164 *Neobeckia* Greene .....
N. aquatica (Eaton) Britton *
2.690 *Neopieris* Birtton .....
Andromeda mariana L.
2.159 *Neslia* Desv. .....
N. paniculata (L.) Desv. *
1.641 *Nestronia* Raf. .....
N. umbellula Raf. *
2.174 *Norta* Adans. .....
Sisymbrium strictissimum L.
1.35 *Notholaena* R. Br. .....
Acrostichum Marantae L.
1.214 *Nothoholcus* Nash. .....
Holcus lanatus L.
1.501 *Nothoscordum* Kunth. .....
N. pulchellum Kunth.
2.567 *Nuttallia* Raf. .....
Bartonia decapetala Pursh
3.67 *Nyctelea* Scop. .....
(*N. Nyctelea* (L.) Britton)
3.18 *Nymphoides* Hill .....
N. flava Hill

1.493 *Oceanorus* Small .....
O. leimanthoides (A. Gray) Small *
3.219 *Odontites* Gmel. .....
(*O. Odontites* (L.) Wettst.)
2.127 *Odostemon* Raf. .....
Berberis Aquifolium Pursh.
3.90 *Onosmodium* Michx. .....
O. hispidum Michx.
3.377 *Oonopsis* (Nutt.) Greene .....
O. multicaulis (Nutt.) Greene
2.243 *Opulaster* Medic. .....
Spirea opulifolia L.
2.571 *Opuntia* (Tourn.) Mill. .....
Cactus Opuntia L.
3.80 *Oreocarya* Greene .....
O. suffruticosa (Torr.) Greene
2.387 *Orophaca* Britton .....
O. caespitosa (Nutt.) Britton
3.216 *Orthocarpus* Nutt. .....
O. luteus Nutt.
1.174 *Oryzopsis* Michx. .....
O. asperifolia Michx.
1.606 *Ostrya* (Micheli) Scop. .....
O. Ostrya (L.) MacM.
3.507 *Othake* Raf. .....
O. tenuifolium Raf.
3.213 *Otophylla* Benth. .....
Gerardia auriculata Michx.
2.704 *Oxycoccus* (Tourn.) Hill .....
O. vulgaris Hill
2.692 *Oxydendrum* DC. .....
O. arboreum (L.) DC. *
2.637 *Oxypolis* Raf. .....
Sium rigidus L.
1.659 *Oxyria* Hill .....
(*O. digyna* (L.) Hill)
2.388 *Oxytropis* DC. .....
O. montana (L.) DC.

2.603 *Pachylophus* Spach .....
(*P. caespitosa* (Nutt.) Raimann.)
2.480 *Pachysandra* Michx. .....
(*P. procumbens* Michx.)
2.492 *Pachystima* Raf. .....
(*P. Myrsinites* (Pursh) Raf.)
2.328 *Padus* Mill. .....
Prunus Padus L.
1.262 *Panicularia* Fabr. .....
Poa aquatica L.
1.632 *Papyrius* Lam. .....
(*P. papyrifera* (L.) Kuntze)
2.26 *Paronychia* (Tourn.) Adans. .....
Illecebrum Paronychia L.
2.366 *Parosela* Cav. .....
Dalea obovatifolia Ort.
2.582 *Parsonsia* P. Br. .....
Lythrum Parsonsia L.
2.511 *Parthenocissus* Planch. .....
(*P. quinquefolia* (L.) Planch.)
3.189 *Paulownia* Sieb. & Zucc. .....
P. tomentosa (Thunb.) Baill. *
2.570 *Pediocactus* Britton & Rose .....
(*P. Simpsoni* (Engelm.) Britton & Rose)
1.33 *Pellaea* Link .....
P. atropurpurea (L.) Link
1.444 *Peltandra* Raf. .....
(*P. virginica* (L.) Kunth.)
3.182 *Pentstemon* Mitchell .....
P. pubescens Soland.
3.291 *Pepo* (Tourn.) Mill. .....
Cucurbita Pepo L.
1.569 *Peramium* Salisb. .....
P. repens (L.) Salisb.
3.154 *Perilla* Ard. .....
(*P. frutescens* (L.) Britton)
2.133 *Persea* (Plum.) Gaertn. f. .....
P. gratissima Gaertn. f. (*Persea Persea* (L.) Cockerell)
1.665 *Persicaria* (Tourn.) Mill. .....
Polygonum Persicaria L.
1.551 *Perularia* Lindl. .....
nil
2.368 *Petalostemum* Michx. .....
P. candidum Michx.
3.531 *Petasites* (Tourn.) Mill. .....
Tussilago Petasites L.
3.171 *Petunia* Juss. .....
P. parviflora Juss.
2.72 *Petrorhagia* (Ser.) Link .....
(*P. Saxifraga* (L.) Ser.)
3.68 *Phacelia* Juss. .....
P. secunda J. F. Gmel.
3.487 *Phaethusa* Gaertn. .....
P. americana Gaertn.
2.645 *Phellopterus* Nutt. .....
(*P. montanus* Nutt.)
1.104 *Philotria* Raf. .....
Elodea canadensis Michx.
1.193 *Phippsia* R. Br. .....
P. algida (Soland.) R. Br. *
1.639 *Phoradendron* Nutt. .....
P. californicum Nutt.
1.232 *Phragmites* Trin. .....
Arundo Phragmites L.
1.25 *Phyllitis* Ludwig .....
Asplenium Scolopendrium L.
2.685 *Phyllodoce* Salisb. .....
(*P. coerulea* (L.) Babingt.)
2.521 *Phymosia* Desv. .....
P. aubitiloides (L.) Desv.
3.155 *Physalodes* Boehm. .....
P. physalodes (L.) Britton *
2.156 *Physaria* A. Gray .....
(*P. didymocarpa* (Hook.) A. Gray)
1.60 *Picea* Link .....
P. abies (L.) Karst.

3.508 *Picradeniopsis* Rydb. .....
(*P. oppositifolia* (Nutt.) Rydb.)
2.690 *Pieris* D. Don .....
P. formosa D. Don
1.636 *Pilea* Lindl. .....
P. mucosa Lindl.
1.555 *Piperia* Rydb. .....
P. elegans (Lindl.) Rydb.
2.633 *Pleiotaenia* Coult. & Rose .....
P. Nuttallii (DC.) Coult. & Rose *
3.14 *Pleurogyna* Eschol. .....
(*P. rotata* (L.) Griseb.)
1.247 *Pleuropogon* R. Br. .....
P. Sabinii R. Br.
1.675 *Pleuropterus* Turcz. .....
Pleuropterus cordatus Turcz. =
Polygonum multiflorum Thunb.
3.447 *Pluchea* Cass. .....
Conyza marilandica Michx.
3.82 *Pneumaria* Hill .....
P. maritima (L.) Hill *
2.205 *Podostemum* Michx. .....
(*P. ceratophyllum* Michx.)
1.559 *Pogonia* Juss. .....
Arethusa ophioglossoides L.
2.476 *Poinsettia* Graham .....
P. pulcherrima (Willd.) Graham
2.199 *Polanisia* Raf. .....
P. graveolens Raf.
2.697 *Polycodium* Raf. .....
Vaccinium stamineum L.
1.521 *Polygonatum* (Tourn.) Mill. .....
Convallaria polygonatum L.
1.676 *Polygonella* Michx. .....
P. parviflora Michx.
1.201 *Polypogon* Desf. .....
Alopecurus Monspeliensis L.
1.16 *Polystichum* Roth. .....
(*P. Lonchitis* (L.) Roth.)
2.248 *Porteranthus* Britton .....
P. trifoliatus (L.) Britton
2.265 *Poteridium* Spach .....
(*P. annuum* (Nutt.) Spach) .....
3.377 *Prionopsis* Nutt. .....
P. ciliata Nutt. *
2.332 *Prosopis* L. .....
P. spicigera L.
2.631 *Pseudotaenidia* Mackenzie .....
P. montana Mackenzie *
1.346 *Psilocarya* Torr. .....
P. scirpoides Torr.
3.504 *Psilostrophe* DC. .....
P. gnaphalodes DC.
1.31 *Pteridium* Scop. .....
(*P. aquilinum* (L.) Kuhn.)
2.673 *Pterospora* Nutt. .....
P. andromedea Nutt. *
2.656 *Ptilimnium* Raf. .....
Ammi capillaceum Michx.
3.312 *Ptiloria* Raf. .....
P. pauciflora (Torr.) Raf.
1.267 *Puccinellia* Parl. .....
Poa distans L.
2.102 *Pulsatilla* (Tourn.) Mill. .....
Anemone Pulsatilla L.
1.641 *Pyrularia* Michx. .....
(*P. pubera* Michx.)
2.706 *Pyxidanthera* Michx. .....
P. barbulata Michx. *

1.508 *Quamasia* Raf. .....
Q. esculenta Raf.
3.42 *Quamoclit* (Tourn.) Moench. .....
Ipomoea coccinea L.
3.162 *Quinculat* Raf. .....
Q. lobata (Torr.) Raf. *

2.159 *Radicula* Hill .....
Sisymbrium amphibium L.
2.596 *Raimannia* Rose .....
R. laciniata (Hill) Rose
3.474 *Ratibida* Raf. .....
Rudbeckia columnaris Sims.
1.638 *Razoumofskya* Hoffm. .....
R. caucasica Hoffm.
1.235 *Redfieldia* Vasey .....
Graphephorum flexuosum Thurb.
2.679 *Rhodora* L. .....
nil
1.238 *Rhombolytrum* Link .....
R. rhomboideum Link
3.487 *Ridan* Adans. .....
(*R. alternifolius* (L.) Britton)
2.426 *Robertiella* Hanks .....
(*R. Robertiana* (L.) Hanks)
2.579 *Rotala* L. .....
R. verticillaris L.
2.15 *Roubieva* Moq. .....
R. multifida (L.) Moq. *
1.341 *Rynchospora* Vahl. .....
R. aurea Vahl.

3.4 *Sabbatia* Adans. .....
Chironia dodecandra L.
1.163 *Sacciolepis* Nash .....
Panicum gibbum Ell.
1.37 *Salvinia* Adans. .....
(*S. natans* (L.) Hoffm.)
2.23 *Sarcobatus* Nees .....
S. vermiculatus (Hook.) Torr. *
2.134 *Sassafras* Nees & Eberm. .....
(*S. Sassafras* (L.) Karst.)
1.171 *Savastana* Schrank .....
S. hirta Schrank
1.226 *Schedonnardus* Steud. .....
S. texanus Steud.

1.115 *Schizachyrium* Nees .....
Andropogon brevifolius Sw.
1.9 *Schizaea* J. E. Smith .....
S. dichotoma (L.) J. E. Smith
2.247 *Schizonotus* Lindl. .....
(*S. sorbifolius* (L.) Lindl.)
2.482 *Schmaltzia* Desv. .....
Rhus aromatica Ait.
1.348 *Scleria* Berg. .....
S. flagellum-nigrorum Berg.
3.355 *Sclerolepis* Cass. .....
S. uniflora (Walt.) Porter. *
1.261 *Scolochloa* Link .....
Arundo festucacea Willd.
1.48 *Selaginella* Beauv. .....
Lycopodium selaginoides L.
2.190 *Selenia* Nutt. .....
(*S. aurea* Nutt.)
3.405 *Sericocarpus* Nees .....
S. solidagineus (Michx.) Nees
3.306 *Serinia* Raf. .....
(*S. oppositifolia* (Raf.) Kuntze.)
2.376 *Sesban* Adans. .....
Aeschynomene Sesban L.
3.231 *Setiscapella* Barnhart. .....
Ultricularia subulata L.
2.262 *Sibbaldiopsis* Rydb. .....
S. tridentata (Soland.) Rydb. *
3.378 *Sideranthus* Fraser .....
S. spinulosus (Nutt.) Sweet.
1.232 *Sieglingia* Bernh. .....
S. decumbens Bernh.
2.272 *Sieversia* Willd. .....
Dryas anemonoides Pall.
1.288 *Sitanion* Raf. .....
S. elymoides Raf.
3.324 *Sitilias* Raf. .....
S. caroliniana (Walt.) Raf.
2.170 *Sophia* Adans. .....
Sisymbrium Sophia L.
3.195 *Sophronanthe* Benth. .....
S. hispida Benth.
1.119 *Sorghastrum* Nash .....
S. avenaceum (Michx.) Nash.
1.222 *Spartina* Schreb. .....
S. Schreberi Gmel.
1.444 *Spathyema* Raf. .....
S. foetida (L.) Raf. *
3.297 *Specularia* Heist. .....
Campanula Speculum L.;
S. Seculum (L.) DC.
2.651 *Spermolepis* Raf. .....
Daucus divaricatus Walt.
1.243 *Sphenopholis* Scribn. .....
Aira obtusata Michx.
3.469 *Spilanthes* Jacq. .....
S. urens Jacq.
1.446 *Spirodela* Schleid. .....
(*S. polyrhiza* (L.) Schleid.)
1.194 *Sporobolus* R. Br. .....
Agrostis indica L.
2.169 *Stanleya* Nutt. .....
(*S. pinnata* (Pursh) Britton)
1.163 *Steinchisma* Raf. .....
Panicum hians Ell.
2.712 *Steironema* Raf. .....
S. ciliatum (L.) Raf.
1.489 *Stenanthium* Kunth. .....
(*S. gramineum* (Ker.) Morong.)
1.319 *Stenophyllus* Raf. .....
Scirpus stenophyllus Ell.
2.610 *Stenosiphon* Spach .....
S. linifolium (Nutt.) Britton *
3.379 *Stenotus* Nutt. .....
S. acaulis Nutt.
2.461 *Stillingia* Garden .....
(*S. sylvatica* L.)
3.231 *Stomoisia* Raf. .....
Utricularia cornuta Michx.
1.520 *Streptopus* Michx. .....
S. roseus Michx.
2.423 *Strophostyles* Ell. .....
S. angulosa Ell.
3.40 *Stylisma* Raf. .....
Convolvulus aquaticus Walt.
2.140 *Stylophorum* Nutt. .....
(*S. diphyllum* (Michx.) Nutt.)
2.393 *Stylosanthes* Sw. .....
S. procumbens Sw.
3.290 *Succisa* (Vaill.) Moench. .....
Scabiosa Succisa L.
2.224 *Sullivantia* T. & G. .....
Saxifraga Sullivantii T. & G.
3.276 *Symphoricarpos* (Dill.) Ludwig .....
Lonicera Symphoricarpos L.
2.721 *Symplocos* Jacq. .....
S. martinicensis Jacq.
3.118 *Synandra* Nutt. .....
S. hispidula (Michx.) Britton *
2.102 *Syndesmon* Hoffmg. .....
S. thalictroides (L.) Hoffmg. *
1.455 *Syngonanthus* Ruhland .....
Eriocaulon umbellatum Lam.
3.538 *Synosma* Raf. .....
S. suaveolens (L.) Raf. *
1.121 *Syntherisma* Walt. .....
S. praecox Walt.
3.198 *Synthyris* Benth. .....
S. reniformis Benth.

2.640 *Taenidia* Drude .....
T. integerrima (L.) Drude *
2.35 *Talinum* Adans. .....
Portulaca triangularis Jacq.

1.64 *Taxodium* L. C. Rich .....
T. distichum (L.) L. C. Rich
3.508 *Tetraneuris* Greene .....
T. acaulis (Pursh) Greene
3.233 *Thalesia* Raf. .....
Orobanche uniflora L.

2.639 *Thaspium* Nutt. .....
T. aureum Nutt.
3.500 *Thelesperma* Less. .....
T. scabiousoides Less.
2.169 *Thelypodium* Endl. .....
Pachypodium laciniatum (Hook.) Nutt.
2.343 *Thermopsis* R. Br. .....
T. lanceolata (Willd.) R. Br.
2.223 *Therofon* Raf. .....
Boykinia aconitifolia Nutt.
3.513 *Thymophylla* Lag. .....
T. setifolia Lag.
2.206 *Tillaeastrum* Britton .....
nil
1.673 *Tiniaria* Webb & Moq. .....
T. Convolvulus (L.) Webb & Moq.
1.573 *Tipularia* Nutt. .....
(*T. unifolia* (Muhl.) B.S.P.)
2.59 *Tissa* Adans. .....
Arenaria rubra L.
2.469 *Tithymalopsis* Kl. & Garcke .....
T. corollata (L.) Kl. & Garcke
2.471 *Tithymalus* (Tourn.) Adans. .....
Euphorbia dendroides L.
1.486 *Tofieldia* Huds. .....
T. palustris Huds.
2.625 *Torilis* Adans. .....
Tordylium Anthriscus L.
1.665 *Tovara* Adans. .....
(*T. virginiana* (L.) Raf.)
3.402 *Townsendia* Hook. .....
T. sericea Hook.
2.483 *Toxicodendron* (Tourn.) Mill. .....
Rhus Toxicodendron L.
1.491 *Toxicoscordion* Rydb. .....
Zygadenus intermedius Rydb.
1.632 *Toxylon* Raf. .....
T. pomiferum Raf. *
1.672 *Tracaulon* Raf. .....
T. arifolium Raf.
3.23 *Trachelospermum* Lemaire .....
T. jasminoides Lemaire
2.103 *Trautvetteria* F. & M. .....
T. carolinensis (Walt.) Vail *
1.486 *Triantha* Nutt. .....
T. glutinosa (Michx.) Baker
2.537 *Triadenum* Raf. .....
Hypericum virginicum L.
1.233 *Tridens* R. & S. .....
Poa coerulescens Michx.

3.369 *Trilisa* Cass. .....
T. odoratissima (Walt.) Cass.
1.562 *Triphora* Nutt. .....
(*T. trianthophora* (Sw.) Rydb.)
1.235 *Triplasis* Beauv. .....
T. americana Beauv.
1.111 *Tripsacum* L. .....
T. dactyloides L.
2.33 *Tripterocalyx* (Torr.) Hook. .....
(*T. micranthus* (Torr.) Hook.)
1.216 *Trisetum* Pers. .....
Avena striata Lam.
1.62 *Tsuga* Carr. .....
T. Sieboldi Carr. (*Abies Tsuga* Sieb. & Zucc.)

1.516 *Unifolium* Haller .....
Convallaria bifolia L.
1.636 *Urticastrum* Fabr. .....
(*U. divaricatum* (L.) Kuntze)
2.693 *Uva-Ursi* Mill. .....
(*U. Uva-Ursi* (L.) Britton)

2.73 *Vaccaria* Medic. .....
(*V. Vaccaria* (L.) Britton)
1.515 *Vagnera* Adans. .....
Convallaria stellata L.
3.286 *Valerianella* (Tourn.) Mill. .....
Valeriana Locusta L.
3.350 *Vernonia* Schreb. .....
Serratula noveboracensis L.
3.226 *Vesiculina* Raf. .....
Utricularia saccata Le Conte
2.424 *Vigna* Savi. .....
Dolichos luteolus Jacq.
3.37 *Vincetoxicum* Walt. .....
V. gonocarpus Walt.
2.122 *Viorna* Reichb. .....
Clematis Viorna L. (*Viorna urnigera* Spach.)
2.62 *Viscaria* (Rivin.) Roehl. .....
V. vulgaris Roehl.
2.697 *Vitis-Idaea* (Tourn.) Hill .....
V. Vitis-Idaea (L.) Britton *

2.268 *Waldsteinia* Willd. .....
W. geoides Willd.
2.627 *Washingtonia* Raf. .....
Myrrhis Claytoni Michx.
1.448 *Wolffia* Horkel. .....
Lemna hyalina Delile
1.449 *Wolffiella* Hegelm. .....
W. oblonga (Phil.) Hegelm.
1.12 *Woodsia* R. Br. .....
Polypodium ilvense L.

2.89 *Xanthorrhiza* L'Her. .....
X. apiifolia L'Her. *

2.431 *Xanthoxalis* Small .....
X. corniculata (L.) Small

1.488 *Xerophyllum* Michx. .....
(*X. asphodeloides* (L.) Nutt.)

3.489 *Ximenesia* Cav. .....
(*X. encelioides* Cav.)

2.691 *Xolisma* Raf. .....
Andromeda ferruginea Walt.

1.88 *Zannichellia* L. .....
(*Z. palustris* L.)

1.167 *Zizaniopsis* Doell & Aschers. .....
Zizania miliacea Michx.

2.641 *Zizia* Koch .....
Z. aurea (L.) Koch

2.394 *Zornia* Gmel. .....
(*Z. bracteata* (Walt.) Gmel.)

1.491 *Zygadenus* Michx. .....
Z. glaberrimus Michx. *

2.468 *Zygophyllidium* Small .....
Z. hexagonum (Nutt.) Small

NEW COMBINATIONS IN MOSSES V [1])

R. van der Wijk et W. D. Margadant (Groningen)

Anisothecium persquarrosum (Dus.) Broth. var. *falklandicum* (Card.) Wijk et Marg.

Basionym: *Dichodontium dicranelloides* Card. var. *falklandicum* Card., Bull. Herb. Boiss. ser. 2, 5: 999. 1905.

Arctoa hyperborea (With.) B.S.G. var. *papillosa* (Ren. et Card.) Wijk et Marg.

Basionym: *Dicranum hyperboreum* (With.) Sm. var. *papillosum* Ren. et Card., Rev. Bryol. 15: 70. 1888.

Barbella Fleisch. sect. *Capillidium* (Broth.) Wijk et Marg.

Basionym: *Floribundaria* Fleisch. sect. *Capillidium* Broth., Nat. Pfl. 1(3): 821. 1906.

Brachythecium fendleri (Sull.) Jaeg. var. *idahense* (Ren. et Card.) Wijk et Marg.

Basionym: *Brachythecium idahense* Ren. et Card., Bot. Gaz. 15: 60. 9*c*. 1890.

Brachythecium fendleri (Sull.) Jaeg. var. *subjulaceum* (Pfeff.) Wijk et Marg.

Basionym: *Brachythecium collinum* (C. Muell.) B.S.G. var. *subjulaceum* Pfeff., Neue Denkschr. Schweiz. Ges. Naturw. 24(5): 77. 1869.

Braunfelsia edentula (Mitt.) Wijk et Marg. var. *angusta* (Wright) Wijk et Marg.

Basionym: *Eucamptodon edentulus* Mitt. var. *angustus* Wright, Trans. Linn. Soc. Bot. ser. 2, 4: 256. 1894.

Ditrichum difficile (Dub.) Fleisch. var. *tenellum* (C. Muell.) Wijk et Marg.

Basionym: *Leptotrichum capense* C. Muell. var. *tenellum* C. Muell., Hedwigia 38: 89. 1899.

Drepanocladus aduncus (Hedw.) Warnst. var. *strictus* (Berggr.) Wijk et Marg.

Basionym: *Hypnum kneiffii* (B.S.G.) Schimp. var. *strictum* Berggr., K. Svensk. Vet. Ak. Handl. 13(7): 82. 1875.

Ectropothecium stereodontoides (Dix.) Wijk et Marg.

Basionym: *Ctenidium stereodontoides* Dix., J. Indian Bot. 2: 186. 9. 1921.

Entodon beyrichii (Schwaegr.) C. Muell. var. *muenchii* (Card.) Wijk et Marg.

Basionym: *Entodon erythropus* Mitt. var. *muenchii* Card., Rev. Bryol. 37: 11. 1910.

Erythrodontium longisetum (Hook.) Par. var. *rupestre* (Hamp.) Wijk et Marg.

Basionym: *Leptohymenium cylindricaule* (C. Muell.) Hamp. var. *rupestre* Hamp., Ann. Sc. Nat. Bot. ser. 5, 4: 372. 1865.

Fissidens bryoides Hedw. var. *brevifolius* (Ren. et Card.) Wijk et Marg.

Basionym: *Fissidens incurvus* Roehl. var. *brevifolius* Ren. et Card., Bot. Gaz. 14: 94. 1889.

Fissidens minutulus Sull. ssp. *pusillus* (Wils.) Wijk et Marg.

Basionym: *Fissidens viridulus* (Sw.) Wahlenb. var. *pusillus* Wils., Bryol. Brit. 303. 1855.

Funaria ampliretis (C. Muell.) Broth. var. *obtusata* (Sim) Wijk et Marg.

Basionym: *Entosthodon marginatus* C. Muell. var. *obtusatus* Sim, Trans. R. Soc. S. Afr. 15: 29. 1926.

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1) "I" in Taxon 7: 287. 1958, "II" id. 8: 70. 1959, "III" id. 8: 106. 1959, "IV" id. 9: 50. 1960.

Garckea comosa (Doz. et Molk.) Wijk et Marg.

Basionym: *Grimmia comosa* Doz. et Molk., Ann. Sc. Nat. Bot. ser. 3, 2: 304. 1844.

Grimmia donniana Sm. ssp. *bifrons* (De Not.) Wijk et Marg.

Basionym: *Grimmia bifrons* De Not., Cronac. Briol. Ital. 16. 1866.

Grimmia donniana Sm. var. *holzingeri* (Card. et Thér.) Wijk et Marg.

Basionym: *Grimmia holzingeri* Card. et Thér., Bot. Gaz. 30: 123. 1890.

Grimmia pulvinata (Hedw.) Sm. var. *bescherellei* (Corb.) Wijk et Marg.

Basionym: *Grimmia orbicularis* Bruch var. *bescherellei* Corb., Compt. Rend. Ass. Franc. Avanc. Sc. 34: 482. 1905.

Heterophyllium foliolatum (Card.) Wijk et Marg.

Basionym: *Acanthocladium foliolatum* Card., Bull. Soc. Bot. Genève ser. 2, 4: 382. 1912.

Holodontium falcatum (R. Brown ter.) Wijk et Marg.

Basionym: *Trichostomum falcatum* R. Brown ter., Trans. New Zealand Inst. 29: 480. 1897.

Holomitrium cylindraceum (P. Beauv.) Wijk et Marg.

Basionym: *Cecalyphum cylindraceum* P. Beauv., Prodr. 51. 1851.

Holomitrium cylindraceum (P. Beauv.) Wijk et Marg. var. *cucullatum* (Besch.) Wijk et Marg.

Basionym: *Holomitrium vaginatum* (Hook.) Brid. fo. *cucullatum* Besch., Ann. Sc. Nat. ser. 6, 9: 328. 1880.

Holomitrium cylindraceum (P. Beauv.) Wijk et Marg. var. *obtusifolium* (Besch.) Wijk et Marg.

Basionym: *Holomitrium vaginatum* (Hook.) Brid. var. *obtusifolium* Besch., Ann. Sc. Nat. Bot. ser. 6, 9: 328. 1880.

Hookeriopsis taylorii (C. Muell.) Wijk et Marg.

Basionym: *Hookeria taylorii* C. Muell., Syn. 2: 222. 1851.

Hyophila pulchella (Thér. et Hilp.) Wijk et Marg.

Basionym: *Macroglossum pulchellum* Thér. et Hilp., Beih. Bot. Centralbl. 50(2): 67. 1933.

Isothecium stoloniferum Brid. var. *myurellum* (Kindb.) Wijk et Marg.

Basionym: *Isothecium myurellum* Kindb., Bull. Torr. Bot. Cl. 17: 269. 1890.

Isothecium stoloniferum Brid. var. *thamnioides* (Kindb.) Wijk et Marg.

Basionym: *Isothecium thamnioides* Kindb., Eur. N. Am. Bryin. 1: 36. 1897.

Kiaeria blyttii (B.S.G.) Broth. var. *hispidula* (Williams) Wijk et Marg.

Basionym: *Dicranum hispidulum* Williams, Bull. New York Bot. Gard. 2(7): 353. *34.* 1902.

Lepyrodon hexastichus (Mont.) Wijk et Marg.

Basionym: *Leucodon hexastichus* Mont., Ann. Sc. Nat. Bot. ser. 3, 4: 101. 1845.

Leskeella tectorum (Hedw.) Hag. ssp. *cyrtophylla* (Kindb.) Wijk et Marg.

Basionym: *Leskea cyrtophylla* Kindb. in Macoun, Cat. Canad. Pl. 6: 169. 1892.

Leucodon maritimus (Hook.) Wijk et Marg.

Basionym: *Leskea maritima* Hook., Musci Exot. 2: *166.* 1819.

Leucoloma longifolium (Brid.) Wijk et Marg.

Basionym: *Trichostomum longifolium* Brid., Spec. Musc. 1: 234. 1806.

Lopidium semi-marginatulum (C. Muell.) Wijk et Marg.

Basionym: *Hypopterygium semi-marginatulum* C. Muell., J. Mus. Godeffroy 3(6): 80. 1874.

Macromitrium pallidum (P. Beauv.) Wijk et Marg.

Basionym: *Orthotrichum pallidum* P. Beauv., Prodr. 81. 1805.

Merceya longirostris (Griff.) Wijk et Marg.

Basionym: *Gymnostomum longirostre* Griff., Calcutta J. Nat. Hist. 2: 480. 1842.

Mittenothamnium diminutivum (Hamp.) Britt. var. *molle* (Hamp.) Wijk et Marg.

Basionym: *Hypnum perspicuum* Hamp. var. *molle* Hamp., Ann. Sc. Nat. Bot. ser. 5, 5: 318. 1866.

Mittenothamnium diminutivum (Hamp.) Britt. var. *teres* (Hamp.) Wijk et Marg.

Basionym: *Hypnum perspicuum* Hamp. var. *teres* Hamp., Ann. Sc. Nat. Bot. ser. 5, 5: 318. 1866.

Oxyrrhynchium praelongum (Hedw.) Warnst. var. *californicum* (Grout) Wijk et Marg.

Basionym: *Eurhynchium praelongum* (Hedw.) B.S.G. var. *californicum* Grout, Bull. Torr. Bot. Cl. 25: 248. 1898.

Oxyrrhynchium savatieri (Besch.) Broth. var. *arachnoideum* (Sak.) Wijk et Marg.
Basionym: *Oxyrrhynchium arachnoideum* Sak., Bot. Mag. Tokyo 51: 796. 1937.

Oxyrrhynchium savatieri (Besch.) Broth. var. *satsumense* (Sak.) Wijk et Marg.
Basionym: *Oxyrrhynchium satsumense* Sak., Bot. Mag. Tokyo 46: 745. 1932.

Oxystegus soulae (C. Muell.) Wijk et Marg.
Basionym: *Ptychomitrium soulae* C. Muell. in Ren. et Card., Bull. Soc. R. Bot. Belg. 33(2): 118. 1895.

Oxystegus soulae (C. Muell.) Wijk et Marg. var. *corticicola* (Ren. et Card.) Wijk et Marg.
Basionym: *Barbula corticicola* Ren. et Card., Bull. Soc. R. Bot. Belg. 35(1): 309. 1897.

Papillaria seriata (C. Muell.) Wijk et Marg.
Basionym: *Pilotrichum seriatum* C. Muell., Linnaea 19: 217. 1846.

Pilotrichella quadrangularis (Schwaegr.) Wijk et Marg.
Basionym: *Hypnum quadrangulare* Schwaegr., Spec. Musc. Suppl. 1(2): 211. 1816.

Pleurozium schreberi (Brid.) Mitt. var. *laevigatum* (Lindb.) Wijk et Marg.
Basionym: *Hylocomium parietinum* Lindb. ssp. *laevigatum* Lindb., Act. Soc. Sc. Fenn. 10: 251. 1872.

Pogonatum subtortile (C. Muell.) Jaeg. var. *mentaweicum* (Herz.) Wijk et Marg.
Basionym: *Pogonatum teysmannianum* (Doz. et Molk.) Doz. et Molk. var. *mentaweicum* Herz., Hedwigia 66: 357. 1926.

Pogonatum subtortile (C. Muell.) Jaeg. var. *teysmannianum* (Doz. et Molk.) Wijk et Marg.
Basionym: *Polytrichum teysmannianum* Doz. et Molk., Pl. Jungh. 3: 323. 1854.

Pseudoleskea radicosa (Mitt.) Macoun et Kindb. var. *denudata* (Kindb.) Wijk et Marg.
Basionym: *Pseudoleskea sciuroides* Kindb. var. *denudata* Kindb. in Macoun, Cat. Canad. Pl. 6: 181. 1892.

Rauiella scita (P. Beauv.) Reim. var. *aestivalis* (Aust.) Wijk et Marg.
Basionym: *Thuidium scitum* (P. Beauv.) Aust. var. *aestivale* Aust., Musci Appal. 51. 1870.

Rhabdoweisia fugax (Hedw.) B.S.G. var. *gymnostoma* (Hartm.) Wijk et Marg.
Basionym: *Weisia fugax* Hedw. var. *gymnostoma* Hartm., Handb. Skand. Fl. ed. 5: 396. 1849.

Rhynchostegium selaginellifolium C. Muell. var. *recurvirameum* (C. Muell.) Wijk et Marg.
Basionym: *Rhynchostegium recurvirameum* C. Muell., Flora 82: 475. 1896.

Rhynchostegium stramineoides (Sauerb.) Wijk et Marg.
Basionym: *Hypnum stramineoides* Sauerb., Ber. S. Gall. Naturw. Ges. 1877-78: 490. 1880 (Ad. 2: 754).
Typonym: *Hypnum pseudo-stramineum* Hamp., Linnaea 37: 518. 1872 *hom. illeg.*

Schistidium apocarpum (Hedw.) B.S.G. var. *dupretii* (Thér.) Wijk et Marg.
Basionym: *Grimmia dupretii* Thér., Bryologist 10: 63. 8. 1907.

Schistidium apocarpum (Hedw.) B.S.G. ssp. *longidens* (Philib.) Wijk et Marg.
Basionym: *Grimmia longidens* Philib., Rev. Bryol. 25: 78. 1898.

Schistidium apocarpum (Hedw.) B.S.G. var. *rufescens* (C. Jens.) Wijk et Marg.
Basionym: *Grimmia gracilis* Schwaegr. var. *rufescens* C. Jens., Bot. Faeröes Dan. Invest. 1: 167. 1901.

Schlotheimia linearifolia (C. Muell.) Wijk et Marg.
Basionym: *Macromitrium linearifolium* C. Muell., Bot. Zeit. 3: 543. 1845.
Typonym: *Schlotheimia longifolia* Hornsch., Fl. Bras. 1(2): 33. 1840 *hom. illeg.*

Taxiphyllum wissgrillii (Garov.) Wijk et Marg.
Basionym: *Hypnum wissgrillii* Garov., Bryol. Austriac. Exc. 79. 1840.

Vesicularia galerulata (Dub.) Broth. var. *subpiligera* (Ren. et Par.) Wijk et Marg.
Basionym: *Ectropothecium sphaerocarpum* (C. Muell.) Besch. var. *subpiligerum* Ren. et Par. Rev. Bryol. 29: 84. 1902.

EFFECTIVE PUBLICATION BY XEROX ?

The present International Code of Botanical Nomenclature (1956 edition, Art. 29) indicates that publication is not effective by the issue of microfilm, a ruling doubtless adopted in consideration of the lack of permanence in film and its inevitable ultimate deterioration.

Some University dissertations are now being microfilmed in lieu of publication, which is doubtless a practice primarily because of the present high cost of printing. One such institution is the University of Michigan, Ann Arbor, Michigan. I recently wrote to the University asking about purchasing a microfilm of the dissertation "A monographic study of the fern genus Woodsia" by Donald F. M. Brown, and was informed that the microfilm is available ($ 5.05) but that a Xerox reproduction could be had for $ 16.80 from University Microfilms, Inc., 313 North First Street, Ann Arbor, Michigan (a private firm, in spite of the name, with no connection with the University of Michigan).

I have ordered some Xerox reproductions in the past from University Microfilms [Van Alderwerelt van Rosenburgh's Malayan Ferns and Fern Allies, Supplement 1], and I have been pleased with the clear reproduction and low cost. This Xerox process involves enlarging microfilm and printing it by a sort of offset process on regular book paper; the whole is bound as a book.

These Xerox reproductions are books in every sense of the word, and presumably they are as permanent as any sort of offset process would be.

I conclude that Xerox reproduction in book form is effective publication under the Code, and therefore that Dr. Brown's Woodsia monograph is published. Of course, this immediately raises the question as to the date of publication. It would seem that the proper date would be the issuance of the first bound copy, but how is this to be det rmined? Very likely University Microfilms has the appropriate records, available on enquiry, and may even date the copies issued. As long as only a few firms are engaged in this work the problems are not insurmountable. But since this process is practical and cheap, it is bound to be adopted widely throughout the world, and the problem of dating is bound to be more difficult.

There is no easy solution to this problem of dating, and perhaps no possible solution, as the volume of microfilms expands. Perhaps this portion of the Code will have to be revised to permit effective publication by microfilm, which can be dated, at least so far as University dissertations go. The growing volume of microfilm and the cheapness, as well as problems of space, indicate the microfilm as the publication of the future. It can be assumed that taxonomic works, at least, that are available in microfilm will be reproduced by Xerox in at least a few copies, as soon as this process is at all widely and easily available. Therefore, the problem of the gradual deterioration of the film will not be so important. I put this idea forth for discussion.

Another possible and entirely practicable way to reproduce microfilm permanently is by means of microcards, which is perhaps even preferable to Xerox reproduction in some ways, or probably I should say for some purposes. Microcards are not good for discursive works intended to be read, but they are fine for technical systematic works that are only used occasionally — for a key, a citation, or a description. I recently bought a reproduction of Blume's "Enumeratio Plantarum Javae" (1828) from Micro Methods, Ltd., East Ardsley, Wakefield, Yorkshire, England. The whole book of 277 pages is reproduced on seven small cards, and most cheaply too. The space occupied is negligible, and the text is quite legible under a 10 x hand-lens. Another firm offering microcards is The Microcard Foundation, P.O. Box 2145, Madison 5, Wisconsin, U.S.A.

The Xerox process and microcards also are mentioned in the latest number of Brittonia (vol. 12, no. 2, p. xxiv, April, 1960), but the question of valid publication by these means is not raised. [1])

C. V. Morton

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[1]) It might be mentioned that two other dissertations from the University of Michigan were being microfilmed during the spring of 1960 and are probably now (June) available. They are: "A taxonomic monograph of the genus Equisetum, subgenus Hippochaete," by Richard L. Hauke, and "A monographic study of the fern genus Cystopteris," by Robert F. Blasdell.

NOMEN CONSERVANDUM PROPOSITUM

(72) Proposal to conserve the generic name 3471, **Erythrophleum** Afzel. ex G. Don (Leguminosae) against *Fillaea* Guill. & Perr. (also Leguminosae).

Erythrophleum [Afzel. ex R. Br. in Tuckey, Exped. River Zaire (Congo): 430 (1818), *nomen nudum;* et in Denham, Clapperton & Oudney, Trav. N. & Centr. Afr., Journ. Excurs.: 235 (1826), nomen subnudum;] Afzel. ex G. Don, Gen. Syst. 2: 424 (Oct. 1832), *cum. descr.* (*nom. cons. prop.*) Holotypus: *E. guineense* G. Don. See below for discussion of the correct name of the holotype-species.

Adopted by all recent authors dealing with the genus, of which the following are a few examples: Bentham, Fl. Austral. 2: 297 (1864); et in Benth. & Hook. f., Gen. Pl. 1: 588 (1865); Oliver in Fl. Trop. Afr. 2: 320 (1871); Forbes & Hemsley, Index Fl. Sinensis 1: 214 (in Journ. Linn. Soc. 23) (1887); Taubert in Engl. & Prantl, Nat. Pflanzenfam. 3(3): 126 (1892); Taubert in Engler, Pflanzenw. Ost-Afr. B: 516, C: 196 (1895); F. M. Bailey, Queensland Fl.: 469 (1900); Thonner, Blütenpfl. Afr.: 267 (1908); F. M. Bailey, Comprehensive Cat. Queensland Pl.: 153 (1913); Gagnepain in Lecomte, Fl. Gén. Indo-Chine 2: 116 (1913); Merrill, Enum. Philipp. Pl. 2: 253 (1923); Craib, Fl. Siamensis Enumeratio 1: 540 (1928); Hutchinson & Dalziel, Fl. W. Trop. Afr., ed. 1, 1: 350 (1928); E. G. Baker, Leg. Trop. Afr.: 777 (1930); Howes in Kew Bull. 1930: 133 (1930); Burkill, Dict. Econ. Prod. Malay Penins. 1: 949 (1935); R. O. Williams, Usef. Orn. Pl. Zanzibar & Pemba: 245 (1949); F. W. Andrews, Fl. Pl. Anglo-Egypt. Sudan 2: 123 (1952); Eggeling & Dale, Indigenous Trees Uganda, ed. 2: 66 (1952); Pardy in Rhodes. Agric. Journ. 52: 513 (1955); Torre & Hillcoat in Exell & Mendonça, Consp. Fl. Angol. 2: 252 (1956); Keay in Hutch. & Dalz., Fl. W. Trop. Afr., ed. 2, 1: 483 (1958).

Fillaea Guill. & Perr. in Guillemin, Perrottet & A. Richard, Fl. Seneg. Tent. t. 55 (June-July 1832), p. 242 (Oct. 1832) (*nom. rejic. prop.*) Holotypus: *F. suaveolens* Guill. & Perr.

Adopted by: Meisner, Pl. Vasc. Gen.: 96, 69 (1837); Dietrich, Syn. Pl. 2: 1373, 1425 (1840); Endlicher, Gen. Pl.: 1324 (1840); Endlicher, Enchirid. Bot.: 682 (1841); Reichenbach, Nomenclator: 156 (1841); Bentham in Hook. Journ. Bot. 4: 327 (1842); Walpers, Repert. 1: 857 (1842) & 5: 576 (1845-6); Lindley, Veg. Kingd.: 556 (1846); Pfeiffer, Syn. Bot.: 354 (1870); Pfeiffer, Nomencl. Bot.: 1351 (1874).

Mavia Bertol. f., Ill. Piante Mozamb. 1, in Mem. Accad. Bologna 2: 570, t. 39 (1850), fide Dalla Torre & Harms. Holotypus: *Mavia judicialis* Bertol. f.

Laboucheria F. v. Muell. in Journ. Linn. Soc. 3: 158 (1859). Holotypus: *Laboucheria chlorostachya* F. v. Muell.

Discussion:

a) *Dates of valid publication of Erythrophleum and Fillaea.* The proposal for conserving *Erythrophleum* depends mainly upon the dates of first valid publication of that genus and *Fillaea.*

Erythrophleum appeared several times as a name in literature before it was validly published. In Tuckey (1818) it was nude, while in Denham, Clapperton & Oudney (1826), although there are certain remarks about the genus ("stamina ... perigynous", "calyx and corolla are perfectly regular", "aestivation, if not strictly valvular, is at least not manifestly imbricate"), none of them is diagnostic in separating the genus from its relatives, or intended to be so. *Erythrophleum* was in this reference indicated as a *nomen subnudum* by the Index Kewensis, suppl. 9: 107 (1938), and I can only agree. The first valid publication was by G. Don, Gen. Syst. 2: 424, which appeared in October 1832, according to information from Dr. W. T. Stearn (see Fl. Malesiana 4: CLXXVIII (1954)). Although the spelling "*Erythrophloeum*" is used in Dalla Torre & Harms, Gen. Siphonog.: 215 (1900), *Erythrophleum* is the version used by Don.

Fillaea was published by Guillemin & Perrottet in Fl. Seneg. Tent., on page 242 and plate 55. Now, according to evidence provided by Dr. W. T. Stearn and placed with the copy of this work in the library at Kew, the text and the plate appeared at different dates: p. 242 in October, 1832 and t. 55 probably in June-July 1832 (according to Bibl. Fr. 21 (28): 390 (14 July 1832)).

Although *Erythrophleum* and the text of *Fillaea* both appeared in Oct. 1832, the plate of the latter was published earlier that year, certainly not after July. The plate is an excellent and partially coloured one, with

full analyses and enlargements of the flower, and must certainly constitute the first valid publication of *Fillaea,* which therefore antedates *Erythrophleum.* Bentham's remark (in Hook. Journ. Bot. 4: 328 (1842)) that "should the two ultimately prove to be one and the same, the name of *Fillaea* must give way to the older one of *Erythrophleum*" is incorrect.

b) *Reasons for conserving Erythrophleum.* For more than a century all authors dealing with the genus from a systematic point of view (as distinct from authors of generic catalogues) have used *Erythrophleum* as the correct name, with *Fillaea* relegated to synonymy. Previous authors who maintained *Fillaea* did so in the belief that it was a different entity from *Erythrophleum.* No instance of *Fillaea* being used to include *Erythrophleum* has been found.

There are some ten species in the genus, in tropical Africa, Madagascar, Asia and Australia. All have names under *Erythrophleum,* but only one has a name under *Fillaea, F. suaveolens* Guill. & Perr., the holotype of the generic name.

Erythrophleum is a well-known generic name. Several of its species produce useful timbers. *E. guineense* G. Don is the source of the very poisonous bark formerly much used in Africa in trials by ordeal. It has been also employed medicinally, and as an arrow- and fish-poison.

c) *Nomenclature of Erythrophleum guineense.* Since *Fillaea suaveolens* Guill. & Perr. and *Erythrophleum guineense* G. Don were first published at the same times as their genera, the epithet *suaveolens* antedates *guineense,* and a new combination is necessary under *Erythrophleum:*

Erythrophleum suaveolens (*Guill. et Perr.*) *Brenan,* comb. nov.

Fillaea suaveolens Guill. et Perr. in Guill., Perr. et A. Rich., Fl. Seneg. Tent. t. 55 (? June-July 1832), p. 242 (Oct. 1832).

Erythrophleum guineense G. Don, Gen. Syst. 2: 424 (Oct. 1832).

Although Don, in the reference given above, attributed *E. guineense* to "G. Don, in Edinb. phil. journ. 1824", I can find no trace of its publication in the Edinburgh journal.

Proposed by: J. P. M. Brenan (Kew).

TYPIFICATION OF THE GENERA OF THE BAMBUSOIDEAE. III.

The following statement is offered as a correction of that presented under the name Nipponobambusa Muroi, in part II of this series (Taxon 6: 206. 1957):

Nipponobambusa Muroi, Hyogoken-Tyutokyoiku-Hakubutsugaku-Zasshi (Hyogo Prefecture [Japan] Jour. Secondary Ed. Nat. Hist.), no. 6, p. 89. 1940. — Species typica generis, a Muroi (loc. cit.) electa: N. sawadai (Makino) Muroi (Pleioblastus sawadai Makino, Jour. Jap. Bot. 4: 3. 1927). — Thanks to the assistance of Prof. Tetsuo Koyama, I recently received a photostat copy of Muroi's paper, which appeared in a publication of which complete sets are rare in Western Hemisphere libraries. It is now possible to correct two errors in my earlier statement: 1. The genus was validly published, since Muroi did present a Latin diagnosis. 2. Nipponobambusa hisauchii (Makino) Muroi, the species selected by me (loc. cit.) as the type of the genus must yield this role to N. sawadai (Makino) Muroi, so designated by Muroi.

Muroi's genus is characterized in Latin solely by reference to vegetative characters of a general nature. When translated into English, the author's notes in Japanese may afford further clues to the claim of the genus to independent taxonomic standing.

Washington, D.C. F. A. McClure

MISSOURI BOTANICAL GARDEN

The seventh annual Symposium on Systematics will be held at the Missouri Botanical Garden on Friday and Saturday, October 14 and 15. The subject of this years Symposium will be "The Tools of Taxonomy." The Symposium will be led by Dr. E. Raymond Hall, University of Kansas, and Dr. Robert E. Woodson, Missouri Botanical Garden. Five invited papers will be given on different aspects of the problem as it relates to botanical and zoological systematics. Papers are to be presented by Dr. Robert T. Hatt, Cranbrook Institute of Science; Mr. Paul C. Hutchison, University of California Botanical Garden; Dr. A. C. Smith, U. S. National Museum; Dr. Frits Went, Missouri Botanical Garden; and Dr. Marshall R. Wheeler, University of Texas. The symposium is aided by a grant from the National Science Foundation.

THEODOR K. JUST 1904-1960

News of the death of Dr. Theodor K. Just, for many years Chief Curator of the Department of Botany, was received at the Chicago Natural History Museum with deep regret. Dr. Just was taken ill early in January and since that time had been continuously ill at Billings Hospital and at his home in Oak Park. Death occurred at his home shortly after noon on June 14.

Dr. Just was born in Austria on October 27, 1904, and was educated in that country, receiving the degree of Doctor of Philosophy at the University of Vienna in 1928. After a year with the Museum of Natural History in Vienna, he came to the United States and joined the faculty of the University of Notre Dame, beginning as an instructor and finally becoming head of the Department of Biology of that institution. He joined the staff of the Museum in August of 1946, becoming Chief Curator of the Department of Botany in January of 1947.

In addition to his research and writing in the fields of botany and paleobotany, Dr. Just served as contributor or editor of a number of scientific journals, including the *American Midland Naturalist; Lloydia,* founded by Dr. Just and published by the Lloyd Library and Museum of Cincinnati; *Plant and Animal Communities,* published by the University of Notre Dame; and *Chronica Botanica.*

He was a consultant to the Office of Strategic Services in World War II. He also served as chairman of various committees of the National Research Council and the National Science Foundation.

Dr. Just was a Research Associate in the Department of Biological Sciences at Northwestern University and had conducted seminars at Northwestern University and St. Louis University.

He will be missed at the Museum not only because of his outstanding scholarship but because of his consistently cheerful personality.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Tropical East Africa

Flora of Tropical East Africa. E. A. Bruce† & J. Lewis: *Loganiaceae* (47 pp.; 8 figs.; price 4 s.); R. A. Graham: *Rosaceae* (61 pp., 8 figs.; price 5 s.). Both London, 1960.

Forest Flora of the Ivory Coast

A. Aubréville: La flore forestière de la Côte d'Ivoire. 2nd rev. ed., publ. by Centre Technique Forestier Tropical, Nogent-sur-Marne (Seine), France, 1959. (3 vols., together with 1036 pp. and 369 plates; with general introduction, 2 maps, descriptions of families, genera, and species, keys to genera and species, notes on use, etc.; deals with the larger woody plants. (Price Nfr. 95.40).

Flora of Madagascar

Flora de Madagascar et des Comores. M. Tardieu-Blot: 5. Polypodiacées (*sensu lato*): 5_{11} Blechnacées — 5_{14} Polypodiacées (*sensu stricto*). Paris, 1960. (133 pp., 26 plates).

Flora of Israel (Iconography)

N. Feinbrun & M. Zohary: Flora of the Land of Israel, Iconography. 3 vols., each with 50 plates by R. Koppel. Lada'ath Ltd., Tel-Aviv, 1958/59. (The plates are an arbitrary selection; vol. 2 and 3 include some plates in colour. All illustrated species are briefly described; the text of vol. 1 is Hebrew and English, of vol. 2 Hebrew, of vol. 3 English. Price ?).

Orchids of Thailand

G. Seidenfaden & T. Smitinand: The Orchids of Thailand. A preliminary list. Pt. I; pt. II, 1. The Siam Society, Bangkok, Thailand, 1959. (184 pp., 5 coloured plates, 150 figs.; an enumeration, with general introduction and keys to species. Price Dan. kr. 40.00 for both vols.).

Flora of Peru

J. F. Macbride: Flora of Peru. Publ. as Vol. XIII, pt. V, no. 1, of Botanical Series, Field Museum of Natural History, Chicago, Ill., 1959. (This vol. contains treatments of the families *Haloragidaceae, Araliaceae, Cornaceae, Clethraceae, Ericaceae, Primulaceae, Theophrastaceae, Myrsinaceae, Plumbaginaceae, Ebenaceae, Symplocaceae, Styracaceae, Oleaceae, Loganiaceae, Gentianaceae, Apocynaceae,* and *Convolvulaceae*).

Flora of Paraná

J. Angely: Flora do Paraná. *Asclepiadaceae* paranaenses. Curitiba, Paraná, 1959. (22 pp.; a list of species, with bibliography and enumeration of specimens collected in the state by Malme).

Drawings of British Plants

S. Ross-Craig: Drawings of British plants. XIV. *Adoxaceae — Dipsacaceae.* London, 1960. (39 plates; price 10 s 6 d.).

Flora of Southeastern Iowa

R. A. Davidson: The vascular flora of southeastern Iowa. Publ. as Vol. XX, no. 2, of State University of Iowa Studies in Natural History, Iowa City, Iowa, 1959. (102 pp., 5 maps; an enumeration, with notes on distribution and general introduction. Price $ 1.50).

Flora of Afghanistan

Siro Kitamura: Flora of Afghanistan. Publ. as vol. II of the Results of the Kyoto University Scientific Expedition to the Karakoram and Hindukush 1955, by Kyoto University 1960. (486 pp., 105 fig., 2 maps; an enumeration. With notes on distribution, synonymy and taxonomic states in addition to an introduction and a phytogeographic discussion).

Crassulacearum Icones

D. Raymond-Hamet: Crassulacearum Icones, fasc. 4 (tab. 61-80). Dr. Raymond-Hamet, 14 Rue de la Glacière, Paris 13e, France, 1960. (Price ?).

* * *

New Periodicals

Saccardoa, Monographiae Mycologicae, ed. by R. Ciferri, Laboratorio Crittogamico, Università di Pavia, C.P. 165, Pavia, Italy. This new periodical is devoted to pure and applied mycology. It will appear without periodicity. No. 1 was published in April, 1960; it contains a series of taxonomic papers by A. Batista Chaves et al. called "Fragmenta Mycologica 1".

OFFICE

The International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

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A PROPOSAL RELATED TO TAXONOMIC RESEARCH MATERIAL

Robert A. Davidson (Iowa City)*

If one follows a tiny road paralleling the Des Moines River from Bonaparte, Iowa for about one mile and then turns off on a trail-like path on the Marshall Flake farm and follows this until it ends in the middle of a field, and then goes on foot in and out of high limestone bluffs and ravines for another mile, he, if he is alert, should encounter what may be the southernmost central-states outlier of *Taxus canadensis* Marsh. Two or three people know of this station and are vaguely interested in it. Although the population was discovered probably some fifteen years ago only recently have voucher specimens been distributed. Even so, it is somewhat doubtful that anyone seriously engaged in the cytology, variation, ecology, genetics, or evolution of *Taxus* yet would know of this station and its perhaps unique plants.

It seem reasonable to believe that almost every member of I.A.P.T. carries with him one to several such gems of biologic information gleaned from his individual experiences in his own rather immediate surroundings. This leads to the depressing thought that probably numerous caches of exceptionally interesting and significant materials are never properly exploited even though they are, by certain botanists, already well known and lie "just around the corner." I should like to suggest that we, as an international association, take steps in an attempt to remedy this situation. Until we do, we are allowing a potentially valuable function to go ignored.

Actually, we should not restrict our thoughts in this regard to only unusual materials. A colleague had, for his doctorate dissertation, undertaken a cytotaxonomic study of a small genus of the Compositae. His major professor, a man of considerable professional standing, had at the onset of the study expressed confidence that within a reasonably short time he could obtain from his acquaintances "plenty" of material that at least fairly adequately would sample the genus over its entire North American range. Time went on but the necessary material never materialized. Finally, enough money was gathered to permit a rather hurried cross-country collecting trip (which probably would have been necessary in any event, but which might better have been deferred until a preliminary nucleus of materials had been examined). I have attempted to secure materials from my own sphere of friends and acquaintances with only moderate success. Certain colleagues with whom I have talked about this matter of obtaining materials have voiced their hesitancy to ask such favors from anyone, their friends in particular, feeling that these requests cannot be taken seriously without eliciting a degree of invidiousness.

* Department of Botany, State University of Iowa, Iowa City, Iowa, U.S.A.

COMMONWEALTH MYCOLOGICAL INSTITUTE

It is apparent that we are in serious need of means to obtain research materials that are appropriate for manipulations that we associate with present-day taxonomy. No longer can herbaria alone supply our needs. The herbarium is no less valuable today than yesterday but it is in greater need of supplementation. We need a means of access to, e.g., seeds, buds, population samples, living material, collected perhaps over the entire world; we need the field knowledge of every taxonomist to bring to light special populations, habitats, disjunctions, variations, of which they are aware but which require for meaningful interpretation the attention of "experts."

The question remains: how can we best and most economically obtain these means? My own thoughts have wandered from complex methods which would entail a central control agency and schedules by which taxonomists would be realistically paid for their time and expense, to the following suggestion intended as a starting effort.

My idea is to solicit formally all members of I.A.P.T. outlining the problem that faces us and asking each whether he would like to cooperate in a mutual effort of supply. The intended end result would be a published list of all our members each of whom:

1. considered that he himself might need material for research coming from areas outside those which he could visit personally; and,
2. considered that because of this fact (or because solely of his desire to cooperate), he would be willing to devote some of his time and best efforts attempting to supply the needs of others. Or, more simply, that he would, upon receipt of a given request for materials, be willing to make every serious effort within reason to supply these materials from his own area of "normal" floristic coverage.

Doubtlessly some members would accrue more than they would give and vice versa. A sense of fair play should, it is hoped, exclude from the list persons who might wish to become active participants during short periods of personal need. An annual call for listees should enable persons to activate or deactivate themselves with sufficient flexibility.

In conclusion:

1. Many unusual features of many taxa are known best by taxonomists familiar with local situations — these features often remain only local curiosities until they are brought to the attention of a particular "expert."
2. Many taxonomists could further their research effectiveness if they had at hand materials (both general and bizarre) growing "at the back door" of distant taxonomists.
3. These considerations suggest the compilation and distribution of a list of actively cooperating taxonomists who, needing materials for their own research, guarantee their willingness to give a reasonable amount of time and effort in collecting and supplying materials needed by others.
4. The I.A.P.T. seems an ideal framework within which such a group of cooperating taxonomists might be initiated and could operate.

It should be emphasized that such a program is intended to augment, not substitute, the personal field experience needed in the intensive study of any group.

Your comments and suggestions are enthusiastically urged.

ON THE LATINIZATION OF AUTHORS' NAMES WRITTEN AFTER THE NAMES OF TAXA

B P. Vassilkov (Leningrad)

In the International Code of Botanical Nomenclature the provisions concerning the spelling of authors' names put after the names of taxa are not sufficiently complete. In particular, nothing is said about how to write these names, whether they should be latinized at all and, if so, to what extent. A number of puzzling questions arise in this connection.

As a rule these names are not translated into Latin as regards their meaning nor are they supplied with the appropriate endings that are peculiar to Latin; instead they are only transcribed or, strictly speaking, transliterated into Latin characters. However, this situation is not in any way legitimised by the Rules of the Botanical Nomenclature either in general or in particular. For example, in the Rules nothing is said about the transliteration of some sounds that do not exist in Latin. This especially refers to the names of those authors in whose countries some other alphabet than the Latin one is used. As to diacritical marks the existing situation is also rather indefinite.

In Article 73 of the International Code (1956) it is pointed out that diacritical marks are not used in the Latin names of plants. This is clear, but what is to be done with the authors' names written after these names of plants? Are they included in the term "the names of plants" or not? That is why I decided to look through the International Code in order to find out in what way the authors' names following the names of taxa are to be written, and I soon discovered that there was no definite uniformity in the Code.

For example in "Appendix III" (Nomina generica conservanda et rejicienda) it is evident that in the sections devoted to algae-macrophytes such authors' names as Nägeli, Kützing and Børgesen are written without diacritical marks: "Naeg.", "Kuetz.", "Boerg.", whereas in the section devoted to algae-microphytes they are written with diacritical marks, for example, "Rhabdonema Kütz." The same discrepancies are observed in the section "Lichens": "Leptorhaphis Koerb", but "Lopadium Körb.", and in the section "Musci": "Ephemerella C. Mueller", but "Drepanophyllaria C. Müller". I must say that each of these pairs of different transliterations refers to the name of the same person; originally this name had only one spelling, that with a diacritical mark. Taking into account all the above, I consider it necessary to introduce a special article into the International Code. This article might read more or less thus:

"Authors' names put after the names of taxa are latinized only by transliteration into the Latin alphabet.

The sounds that are not represented by a single Latin letter are reproduced by means of Latin letters in accordance with the rules of the author's native language. If the author's name was previously written in the Latin alphabet the name is not changed. Diacritical marks are not used".

No doubt, such names would be pronounced by the people of different nationalities in different ways but they would always be written in the same way, which is very important.

In the International Code of Botanical Nomenclature this article should be inserted beween Articles 46 and 47.

Examples: Schischkin (Шишкин), Savicz or Savitsch (Савич), Linczevsky or Lintschevsky (Линчевский), Prokhanov (Цроханов), Smarda (Šmarda), Pilat (Pilát), Mueller (Müller), Boergesen (Børgesen), Smith (Smith), Gage (Gage), Kawamura (Kawamura), Maire (Maire).

THE NAME OF THE INDO-PACIFIC STRAND SCAEVOLA*

(Pacific Plant Studies 19)

Harold St. John (Honolulu)

On almost every maritime shore of the tropical Indo-Pacific, there is found a vigorous shrub of the *Goodeniaceae*. It was well figured and described in the early books by Rheede van Draakestein, and by Rumphius, and by others. Under modern nomenclature it has been called *Lobelia Plumierii* L., *Lobelia Taccada* Gaertn., *Lobelia frutescens* Mill., *Scaevola Lobelia* Murr., *Scaevola sericea* Vahl, *Scaevola Koenigii* Vahl, *Scaevola Taccada* (Gaertn.) Roxb., *Scaevola frutescens* (Mill.) Krause, and various other later names that are not significant.

Recently Fosberg (Taxon 5: 7-10, 1956) digested the nomenclature of this species and disposed of most of the names involved. The present writer must, however, take exception to certain of his decisions and to his conclusion that the correct scientific name of the species is *Scaevola sericea* Vahl (1791).

As Fosberg indicated, *Lobelia Plumierii* L. (1753) included two species, the white-fruited Indo-Pacific one and the black-fruited tropical American one. So also did *L. frutescens* Mill. (1768). Miller included references to Linnaeus' Flora Zeylanica and to Plumier, but also had cultivated specimens from seeds of the American plant sent by Catesby and Houston. *L. frutescens* Mill. was a superfluous name, and cannot be used, even in combination under any other genus.

Scaevola Lobelia Murr. (1774) included as a synonym *L. Plumierii* of Linnaeus, an available name. Hence, Murray's name was also superfluous and illegitimate.

Next in order came the name *Lobelia Taccada* Gaertn. (Fruct. et Sem. Pl. 1: 119-120, pl. 25, fig. 5, 1788). Though Linnaeus in 1771 had published the genus *Scaevola* for this plant group, removing it from *Lobelia*, and though Gaertner knew of it and gave this reference, still he did not accept it as a distinct genus, and he reduced it to synonymy under *Lobelia*. He gave references for generic names and descriptions for *Lobelia* in Plumier, and in Linnaeus' Syst. Veg., and for *Scaevola* in Linnaeus' Genera Plantarum on page 1,294. Gaertner included under his new *L. Taccada* as protologues, references to the polynomial or pre-starting-point binomial specific names and descriptions by Rheede, Rumphius, Hermann, and Burmann, all of which applied

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* This is the nineteenth in a series of papers designed to present description, revision, and records of Pacific island plants. The preceding papers were published as Bishop Mus., Occas. Papers 17(7), 1942; 17(13), 1943; 18(5), 1945; Amer. Fern Jour. 35: 87-89, 1945; Torrey Bot. Club, Bul. 73: 588, 1946; Pacif. Sci. 1(2), 116, 1947; 2(2), 96-113, 1948; 2(4), 272-273, 1948; 5(3), 279-286, 1951; 6(2), 145-150, 1952; Webbia 8: 225-228, 1951; Pacif. Sci. 7(2), 165-168, 1953; Webbia 11: 293-299, 1955; Bishop Mus., Occas. Papers 21(13), 275-283, 1955; Not. Syst. 15: 230-232, 1956; Webbia 13(2), 331-342, 1958; and nos. 17-18 are in press.

only to the Indo-Pacific species. Also he listed "Scaevola. Linn. syst. veg. 213." This traces back to the current edition of the Systema Vegetabilium 213, 1774, ed. 14 by Murray, where the genus is accepted but no species mentioned. If one traces this still further back to Murray, ed. 13, 178, 1774, there is included a description of the genus with the single species *S. Lobelia* Murr. It can be argued that since this reference is placed with the other four, all of which are specific synonyms, that this reference to "Scaevola. Linn." is also a specific synonym by implication. However, it seems better in accord with the facts to interpret this just as Gaertner published it, that "Scaevola. Linn. syst. veg. 213" was a generic synonym since Murray's edition included only generic descriptions, just like "Scaevola Linn. gen. 1294", which Gaertner included a few lines above with the other generic references and synonyms. It seems logical to interpret this listing by Gaertner of "Scaevola. Linn. Syst. veg. 213" as his inadvertent misplacement of a generic synonym. If the view were adopted that Gaertner was actually listing *Scaevola Lobelia* Murr. as a synonym, then Art. 7, Proposal K, adopted by the Montreal Botanical Congress (1959) would apply. This provides: "The type of a name or epithet which was nomenclaturally superfluous when published (see Art. 64, 1) is the type of the name or epithet which must be adopted under the Code." If this applies, then the type of *S. Taccada* Gaertn. automatically is the type of *S. Lobelia* Murr., a superfluous binomial, the automatic type of which is the same as that of *S. Plumierii* L. which at that time included both the West Indian and the Indo-Pacific species and had not been typified. The other interpretation, that Gaertner gave the names by Linnaeus and by Murray as only generic synonyms has more support. Gaertner described a new species, called it *S. Taccada*, the epithet being the vernacular name on Ceylon, and he so listed it, as did Hermann whose treatment Gaertner cited. In Hermann, J. Thes. Zeylanicus 29, 1737, it is given as "Arbor exitiosa, marina, lactescens, Indica, TAKKADA vocata, fructu cerasi magnitudine, incarnato, striato, Bellamodagam. H. Ma—." [= Rheede, Hort. Malab.]. And also on page 30 it states "Takkada frutex Zeylonensium, forte Bella-modagam H. Malab. part 4. Tab. 59." Gaertner also cited P. Hermann who in his Musaeum Zeylanicum 45, 1726, calls the plant *Takkada*, and explains that this is its Indian vernacular name. Gaertner cited no specimens or references for the western hemisphere, only those from India and Ceylon. He discusses the two species, eastern and western, and gives four series of characters in which they differ, in corolla, calyx, fruit, and stone. Besides the synonyms and the description for his *L. Taccada*, Gaertner also cited a specimen, "Taccada. Zeylon. E collect. sem. hort. lugdb." It is obvious that much of the detail of the fruit and seed structure as described and figured by Gaertner must have come from this fruit specimen, not being thus detailed in the descriptions and illustrations by Rheede van Draakestein or by Rumphius. In his comparison of his new eastern *L. Taccada*, he gave four contrasting differences from the western species of *Lobelia*, and concludes, "Contra, in Lobelia occidentali, omnia alia sunt; . . ." At that time there was no species named *Lobelia occidentalis*, so he was alluding to the *Lobelia* species occurring in the west. For *Lobelia Plumierii*, the diagnostic characters included: drupe black; and calyx in fruit none or the margin very shortly and unequally 5-dentate. In contrast, for his *L. Taccada* he said that the drupe is crowned by a persistent calyx, and his plate 25, fig. 5, shows five distinct, lanceolate calyx lobes. Gaertner does not mention the color of the fruit of *L. Taccada*, but in the treatment by Rumphius, cited by Gaertner, it is stated to be white. He concluded with "Conf. PLUM. ic. t. 165. f. 1, JACQ. amer. descript. & t. 179. f. 88. Hinc Lobelia *Taccada*. si non pro diversa species, saltem pro insigni varietate habenda erit." Here he invites a comparison with the American species as treated by Plumier and by Jacquin and states that his *L. Taccada* if not a species is a prominent variety. Fosberg correctly decides that this

is an indirect typification of *L. Plumierii* L., restricting it to the American species with black drupes and a short calyx, tubular and truncate or with five tiny, low rounded lobes, by the act of removing the Indo-Pacific one. It was also the first publication of a valid epithet for the Indo-Pacific species. Though Gaertner ends with a sentence suggesting that his plant, if not a species, would be a very distinct variety, yet his name is not a provisional one. He definitely names the plant and publishes it as a species which he accepts himself, so the name is a valid one.

This epithet next appears in a publication by William Roxburgh (Hort. Bengal., ed. W. Carey, 15, 1814). As this passage is critical, it is quoted in full:

"Systematic names.	Native Place	Donors and time &c.
SCAEVOLA Taccada, R. 19	India	Mr. W. R. 1803
Duration & Habit	**Time of Flowering.**	**Time of seed**
L. ♄	0	0"

In full, when the abbreviations are expanded and the footnote is inserted, he published it as follows:

Scaevola Taccada Roxb., (Rheede van Draakestein, Hort. Malabar. 4: 121-122, t. 59, (1673) [= 1683]); native to India; introduced to the garden by W. Roxburgh in 1803; duration and habit, a large tree and shrubby; time of flowering and seeding, the whole year round.

Fosberg argues that this is not a transfer based upon *L. Taccada* Gaertn., but that it was based wholly on the reference to the Hortus Malabaricus. This binomial was effectively published, and technically it had a description, being characterized as a shrubby tree that bore flowers and seeds all year long. In addition it was based on the illustration and accompanying text of what was surely the same species, an excellent double folio page engraving, and two pages of description in Rheede's book of 1683. As a post-Linnaean species may be based on a pre-Linnaean reference, *S. Taccada* Roxb. has a second solid and legal basis. C. B. Robinson in his review of Roxburgh's Hortus Bengalensis (Philipp. Jour. Sci. 7: 413, 1912) has already listed *Scaevola Taccada* Roxb. as one of the numerous species validly published in the Hortus Bengalensis of 1814. Fosberg now explains to the writer (in lit.) that he rejected *S. Taccada* Roxb. (1824) because he considered it a later synonym of S. sericea Vahl (1791). However, a subsequent publication by Roxburgh includes *S. Taccada* (Gaertn.) Roxb., Fl. Ind. 2: 146, 1824, based in part upon *Lobelia Taccada* Gaertn. According to Fosberg's published opinion, this name *S. Taccada* Roxb., (which he cited as from Fl. Ind. 1: 527, 1820), is a later homonym of *S. Taccada* Roxb. (1814), which he had rejected. There are some discrepancies in Fosberg's treatment, and he does not appear to have checked the original publications. The posthumous first edition of Roxburgh, W., Flora Indica, consisted of two volumes, edited and issued by the Rev. William Carey. Only the first volume was published in 1820, and it contained only 493 pages, and hence there was no mention of *Scaevola* on page 527, there being no such page. Volume 2 was printed in 1824 and contained 588 pages. The treatment of *Scaevola Taccada* appears in volume 2: 146-148, 1824.

There was a second edition of Roxburgh's Flora Indica, also issued by Carey. In this in vol. 1: 527-528, 1832, is the treatment of *S. Taccada*, an exact copy of the text in the 1824 edition.

There was still another edition of this Flora Indica, edited by C. B. Clarke, published in 1874, and stated to be "Reprinted literatim from Carey's Edition of 1832." This must have been issued in a much larger edition than the earlier, rare ones, as it can still be obtained and is present in many libraries. It includes in one volume with new pagination the contents of the 1832 edition, and in the margins shows the volume and page numbers from that earlier edition. The treatment of *Scaevola Taccada* Roxb. is on page 177 and there the marginal reference is to 1: 528. The entry for this in vol. 4 of the Index Kewensis, is "*S. Taccada* Roxb., Hort. Beng. 15; Fl. Ind. 1: 527. = Koenigii." The reference given by Fosberg for the publication of *S. Taccada* in Roxb., Fl. Ind. 1: 527, 1820, is like the above in pagination, but as explained, it should have read ed. 1, 2: 146-148, 1824. Later, an expanded entry for this appeared in the Index Kewensis, supplement 9, giving the correct references: "S. Taccada (*Gaertn.*) *Roxb., Hort. Beng.* 15, 1814 — nomen.; *Fl. Ind.* ed. *Carey* & *Wall.*, 2: 146, 1824; *Fl. Ind.* ed. *Carey* 1: 527, 1832. Lobelia Taccada Gaertn.", [Fruct. 1: 119, t. 25, 1788]. Now as to the status of *Scaevola Taccada* Roxb., Fl. Indica ed. 1, 2: 146-148, 1824. It had a long English description, detailed and more than a page in length, that definitely applies to the littoral shrub of the Indian Ocean shores. This Asiatic species was said to have smooth leaves, but in the axil a little tuft of delicate white wool. For the calyx he wrote, "*Calyx* may be called five-leaved; leaflets rather remote, erect, or recurved, permanent." For the fruit he said, "Drupe... when ripe white, ..." His figure shows five persistent, lanceolate calyx lobes on the fruit. Roxburgh stated (p. 147), "A native of most of the maritime parts of the East Indies, and introduced from Pulo-Penang into the Botanic Garden at Calcutta, ... I suspect the American plant, called by Willdenow and others, *Scaevola Lobelia*, to differ specifically from ours; I have therefore preferred Gaertner's specific name." As synonyms Roxburgh listed:

"Lobelia Taccada, Gaertn. fruct. 1. 119. t. 25.

Buglossum littoreum, Rumph. amb. iv. p. 116. t. 54.

Bela modagam, Rheed. mal. iv. 121. t. 59."

Thus, Roxburgh gives the basionym *Lobelia Taccada* Gaertner and the same reference to the plate in the Hortus Malabaricus by Rheede (1683). So, in 1824, Roxburgh uses the same binomial for the same plant, gives a full description, and includes the same pre-Linnaean reference. Fosberg rejected the 1814 *Scaevola Taccada* Roxb., considering it a later synonym of *S. sericea* Vahl (1791). Then he rejected the 1824 *Scaevola Taccada* (Gaertn.) Roxb. name (in error dating it 1820) as a later homonym of the earlier *S. Taccada* Roxb. According to our nomenclature code, a later homonym is a later but identical name based upon a different type. That means the later one is a name for a taxon with a wholly different circumscription. In this case the same author, Roxburgh, published twice the name *Scaevola Taccada* for the same plant, giving descriptions of it from the specimens he had in cultivation in his Hortus Bengalensis, and in both publications gave the reference to the excellent figure and treatment in Rheede's Hortus Malabaricus. There is nothing in the code to require us to treat the second publication of a binomial by an author as a rejected later homonym because he had previously published the same binomial for the same taxon. At the time of Roxburgh, in the early 19th Century, botanists did not typify their new taxa. Roxburgh's Hortus Bengalensis of 1814 was a manuscript written by Roxburgh, but printed at the initiative of Carey while Roxburgh was on a sea voyage in the hope of regaining his health. Roxburgh's Flora Indica, ed. 1, was another

manuscript written by Roxburgh, later edited and printed by Carey in 1820-24 after the death of Roxburgh. In each case the printing was from manuscripts written by Roxburgh. Though botanists are now advised in selecting a lectotype, other things being equal, to select a specimen rather than a published description or figure, this choice is not mandatory. In this instance the four pre-Linnaean references and the fruit specimen from Ceylon which jointly were the basis of *L. Taccada* Gaertn. are still considered to represent the same taxon. The fruit specimen in Leiden apparently furnished some of the fruiting but none of the vegetative or floral details. On recent inquiry the writer was informed (in lit., July 30, 1959) by the Director of the Rijksherbarium, Leiden, that no fruit or herbarium specimen of *Lobelia Taccada*, as cited by Gaertner, could now be found in the herbarium at Leiden. Though, for a lectotype, an actual museum specimen is preferred over a description or an illustration, the single cited fruit specimen has vanished. The writer, therefore, selects *Bela-Modagam* Rheede van Draakestein, Hort. Malab. 4: 121-122, pl. 59 (1673), [= 1683] as the lectotype of *Lobelia Taccada* Gaertn.

The issue here is that of reference to the basionym in the publications by Roxburgh of *Scaevola Taccada*. Roxburgh's first publication of it was in his Hort. Bengal. (1814). This was a catalogue of the plants in the garden, giving in full the binomials and native regions, but all the additional information on donors, time of receipt, duration, habit, time of flowering and seeding, was given briefly, each by a symbol or a single letter abbreviation. Clearly, in this original and valid publication, there was no basionym or reference for one. Later, Roxburgh, in the first edition of his Flora Indica 2: 146-148, 1824, gives a full treatment of the species, which he accepts unchanged. This included a full description, habitat, range, and a contrast with the West Indian species, *S. Lobelia* [= *S. Plumierii*]. His list of synonyms is headed by *Lobelia Taccada* Gaertn. with a reference to the book, volume, page, and plate, but not the date. Also there listed as synonyms are names and references to Rumphius, and to *Bela modagam Rheed.* The latter was given a good description by Rheede and a large, detailed drawing. On his plate there are three names, the first *Bela modagam* in Latin, while the other two are in oriental scripts. Dr. S. Y. Bakr of the University of London (in lit. Dec. 1, 1959) kindly informs us that the second line which is in Malayalam (a branch of the Dravidian stock) reads Vella Mōṭakam, a local vernacular name (= White Fagraea zeylanica); and the third line which is in Arabic is a rendering of the same name, as wihlā mūḍaḥagaṁ. It is not strange that in both of his publications Roxburgh gave the reference to the Hortus Malabaricus of Rheede van Draakestein. This flora of twelve folio volumes, beautifully illustrated and sumptuously printed, is one of the most splendid botanical books of all time. It was the first flora for the Malabar coast or for any major part of India. Naturally Roxburgh gave references to it, even in his condensed garden catalogue. In his second publication (1824) he lists prominently what we now call the basionym, *Lobelia Taccada* Gaertn.

The moot question here is whether or not the basionym may be supplied in a subsequent publication. We now judge the validity of botanical, scientific names by the provisions of the International Code, a new one being issued about every five years. The articles of this code are laws and are mostly retroactive. They establish the legality of the names published in the Species Plantarum of Linnaeus in 1753 and those in all subsequent works. These articles, clear and well formed, are applied to all systematic works, old or new, but they are applied with leniency to the older publications, issued long before any of our botanical laws were adopted. It is asserted and agreed that the binomial system of names for plants, that of a generic name followed by a specific epithet, begins in 1753 in the Species Plantarum of

Linnaeus. This is in spite of the fact that Linnaeus printed the generic names only as center headings, and the trivial names (which we now call specific) well separated and only in the margins, and that he called his polynomials the specific names. The two parts of the binomials are not juxtaposed by Linnaeus even in the index. During subsequent generations botanists have seen the value of binomials and have agreed to adopt them, and to start them, beginning with Linnaeus in 1753. The Gardeners Dictionary by Philip Miller, ed. 8, 1768, also uses binomials, if from the polynomial phrase name, we accept the first word in parentheses as the epithet. More examples could be given, but these should suffice to indicate that, by law or custom, we have always treated with leniency the earlier botanists, especially the important ones, when we apply our recently adopted, retroactive laws. We try to find out, from all sources, what the intent of the early botanist was, and to give him the benefit of the doubt. In this case, Roxburgh in his second and full publication, dealt with the same species of *Scaevola*, gave it the same binomial, cited the same reference to Rheede. Surely, his second publication was not the publication of an accidental, later homonym. It was, on the contrary, a fuller treatment of the same species, and included the basionym and reference. Thus, the earlier 1814 publication was valid, and, supplemented by the 1824 one, established the correct name for the Indo-Pacific strand plant as *Scaevola Taccada* (Gaertn.) Roxb.

Though the writer has many notes on the variations of this species, he is not yet prepared to publish a general revision at this time. The two following, however, are ready:

Scaevola Taccada (Gaertn.) Roxb. var. *sericea* (Vahl) **comb. nov.**

S. sericea Vahl, Symb, Bot. 2: 37, 1791.

S. frutescens (Mill.) Krause var. *sericea* (Forst. f.) Merr., Philipp. Jour. Sci. Bot. 7: 354, 1912.

S. sericea Forst. f., Fl. Ins. Austral. Prodr. 89, 1786, (nom. nud.).

S. frutescens forma *moomomiana* Degener & Greenwell, Fl. Haw., fam. 340: 12/1/1949; and 8/15/1950.

This applies to the variation of the species with foliage sericeous pilose or pilosulous on both sides.

Fosberg states that "*Scaevola sericea* Vahl is not, as commonly supposed, a validation of *S. sericea* Forst. f., but is a new species clearly described by Vahl and based on a plant from Savage Island (Niue) in the central Pacific." Now Vahl indicates on his title page that he deals with plants collected by P. Forskål or by other recent collectors. On page 1 he gives an expanded description of *Cyrtandra biflora* Forst., and gives the reference to "Forst. f., Prodr. pag. 43. Dedit Dn. Prof. Fabricius." On page 2 he gives a description of Forster's second species, *C. cymosa*, and gives the reference. These were the two species of the genus collected on the second voyage of Capt. Cook and described by J. R. & G. Forster (Char. Gen., 5-6, pl. 3, 1776). The first botanical collectors on Savage I., and up to 1791, the only collectors, were the Forsters, father and son, the botanists of Capt. Cook's second voyage around the world. They made a landing on Savage I., stayed on shore a few minutes, till they were driven off by a shower of spears thrown by the savage natives. It was then named Savage I. because of this unfriendly reception. The Forsters collected four littoral species there, before they were forced to flee. This one, the strand *Scaevola* is still common there. The younger Forster, on collecting it, would have labeled it with the same name as the same species which they also collected on the Botany Isles, the holotype of his *S. sericea* which he published, but only as a nomen nudum. J. C. Fabricius (1745-1808) was a student of Linnaeus', and

later a professor at Kiel. Since Dominus Professor Fabricius gave Vahl isotypes of *Cyrtandra biflora* J. R. & G. Forst., and *C. cymosa* J. R. & G. Forst., it can be inferred that the specimen of *Scaevola sericea* from Savage I. also was a Forster collection and that it bore the unpublished name *S. sericea* Forst. f.

The holotype of *S. sericea* has now been investigated by H. W. Hansen of the Copenhagen Botaniske Museum, who supplied a photograph of it and reported (in lit., Nov. 3, 1959), "The type of *Scaevola sericea* Vahl is still in our herbarium, and consists of one leaf, one flower and two small fruits. On the back of the sheet Vahl has written 'Scaevola sericea — desc. e Collect Forst. ded. Dn Fabr.' In his manuscript he further gives: 'Habitat in Savage Island ♄. Fabricius.' I think you are correct in your opinion about this type. It is a part of Forster's plant from Savage Island.

Fig. 1. *Scaevola Taccada* (Gaertn.) Roxb. var. *tuamotuensis* St. John, from holotype, showing the full range of fluctuations of the leaves.

In his manuscript Vahl . . . distinguishes three species.

1. Scaevola Plumieri — 'S. foliis obovatis glabris integerrimis, calyce integra.'
2. Scaevola Koenigii — 'S. foliis obovatis glabris, superne dentato-subrepandis, calyce 5-dentato [.']
3. Scaevola sericea — 'S. foliis obovatis villosis mollissimis, superne dentatis ['']."

Thus, it is established that the holotype of *S. sericea* Vahl was a duplicate of the collecion by the Forsters from Savage Island, and it bears: Forst., an abbreviation of the name of the collectors. When Vahl cited *Cyrtandra biflora* and *C. cymosa* as from Fabricius, instead of J. R. & G. Forster, he was citing the distinguished botanist who gave him the duplicates, rather than the collectors and authors of the species. This practice is fortunately now obsolete, but in the 18th Century there were precedents for it, even in the works of Linnaeus. Doubtless Vahl knew of the nomen nudum for this species, *S. sericea* Forst. f. (1786), based on Forster's other collection of the same species on the same trip. It is likely that his duplicate specimen also bore this binomial. It appears that Vahl seized the name *S. sericea*, published it as his own, validating it with a description. Legally, he had a right to do so. Ethically, it would have been better to have given some acknowledgement to Forster. In sum, *S. sericea* Vahl seems to have been directly derived from *S. sericea* Forst. f., bearing the same binomial for the same species collected by the same explorer on two South Pacific Islands visited on the same voyage. However, *S. sericea* Vahl stands as a valid binomial. On the contrary *S. sericea* Forst. f. is invalid and cannot be transferred. Hence, *S. frutescens* var. *sericea* (Forst. f.) Merr. is illegitimate.

For *S. frutescens* forma *moomomiana* Degener & Greenwell, Fl. Haw. 340: 8/15/50, which was later changed to *S. sericea* Vahl var. *Fauriei* forma *moomomiana* (Degener & Greenwell) O. & I. Degener, Phytologia 6: 321, 1958, the sheet Degener 7,730, marked type, in the New York Botanical Garden, was studied. Its blades are ascending white pilosulous on both sides, and are still softly so on even the oldest leaves, so the pubescence does not seem distinctive. The leaves are thick and rigid, but when dried are not detectibly more brittle. There seem to be no significant characters for separating this as a forma.

S. Taccada (Gaertn.) Roxb. var. *tuamotuensis* var. nov. (fig. 1).

Diagnosis Holotypi: Novellis glabris, pilis in axillis foliorum multis pilosis albis 1-2 mm. longis, foliis 3-15 cm. longis 3.5-36 mm. latis glabris anguste spatulatis ad apicem sparse serrulatis, calycibus glabris, corollis extra glabris, lobis piloso-ciliatis.

Description of all specimens examined: Young shoots glabrous; axillary tufts of numerous hairs, pilose, white, 1-2 (-3) mm. long; leaves 3-15 cm. long, 3.5-36 mm. wide, glabrous, narrowly spathulate and sparsely serrulate towards the apex; calyx glabrous; corollas glabrous without, the lobes merely pilose-ciliate.

Holotypus: Henderson Island, South Pacific Ocean, n. w. end, low brush at top of coral cliffs, 30 m. alt., prostrate, flowers yellowish white outside, yellowish green inside, calyx fleshy, June 21, 1934, *F. R. Fosberg 11,348* (BISH).

Specimens examined: Tuamotu Archipelago: There are abundant specimens (BISH) from the following islands: Ahii, Ahunui, Anaa, Aratika, Arutu, Faite, Fakahina, Fangatau, Hao, Hiti, Katiu, Makatea, Manihi, Maria, Marutea, South Marutea, Napuka, Nengonengo, Paraoa, Rangiroa, Raroia, Taiaro, Takapoto, Takaroa, Takume, Tenararo, Tenarunga, Tepoto, Tikehau, Tikei, Timoe, Tureia, Vahanga, and Vanavana.

Gambier Is: Mangareva.

Flint I.

Marquesas Is: Motu O'a.
Society Is: Raiatea, Scilly.
Pitcairn I.
Austral Is: Maria Atoll.
Tonga: Tongatapu, Vavau.

All of the collections seen from the Tuamotu Archipelago, the Gambier Is., from Henderson I., and from Pitcairn I. are of this variety. It is different from var. *Taccada* in its smaller, narrower blades, and shorter axillary hair tufts.

LORANTHUS

Simone Balle (Bruxelles), J. E. Dandy (London), J. S. L. Gilmour (Cambridge), R. E. Holttum (Kew), W. T. Stearn (London), D. Thoday (Bangor).

The purpose of this communication is to put forward proposals the adoption of which (a) will prevent the alteration of the name *Loranthus europaeus*, still current and representing the best-known species of the Loranthoideae, which has been the subject of important publications, particularly on haustorial structure; and (b) will also preserve the name *Scurrula* for the genus which was recognised by Danser in his revision of the Old World Loranthoideae in 1929 and is currently accepted by botanists concerned with the flora of S.E. Asia.

The genus *Loranthus* at its first publication by Linnaeus in 1753 comprised only one species, *L. americanus* L., which is thus the type by monotypy but has been included since 1830 within the American genus *Psittacanthus* Mart. (1830). In 1762 (Species Plantarum, ed. 2, 1: 472) Linnaeus enlarged the genus *Loranthus* to include not only the American type but four other species, among them the Asiatic *Loranthus Scurrula* which in 1753 he had treated as generically distinct, under the name *Scurrula parasitica;* in 1763 (Species Plantarum, ed. 2, 2: 1673) he added two more species, *L. uniflorus* Jacq. and *L. europaeus* which had come to his attention too late for inclusion with the others. Thus logical following of the type-method would necessitate the use of the name *Loranthus* in place of *Psittacanthus.* To avoid the inconvenience and confusion which such a reversal of current usage would have occasioned, the International Botanical Congress of 1930 conserved the name *Loranthus* from 1762, rejecting *Loranthus americanus* as the type-species in order to conserve the name of the American genus *Psittacanthus* and accepting instead an Old World species *L. Scurrula* (1762) as type of the conserved name *Loranthus.* The intent was excellent but the procedure satisfactory only so long as the Old World species of the group were regarded as congeneric. Since then, however, a different taxonomic viewpoint has prevailed, the genus *Loranthus sensu lato* has been divided into numerous genera and the selection of *L. Scurrula* as type has led to unanticipated difficulties. In accepting this species the Congress ignored the reestablishment of the genus *Scurrula* by G. Don in 1834 and its adoption by Danser in 1929. Danser rejected and ignored this decision (1933: 24; see also S. Balle, 1955: 567).

If *Scurrula* is to be called *Loranthus* (as it must under the existing conservation), another name is needed for *Loranthus europaeus*, i.e. *Hyphear europaeum* (Jacq.) Danser. The result will be to cut across the natural development of the nomenclature of the Loranthoideae, for it is quite clear from the names given to the sections into which *Loranthus sensu lato* was subdivided, following Endlicher, Van Tieghem and others, by Bentham and Hooker (1880) and by Engler (1889) that the name *Loranthus*

was primarily associated by them with the small group of holarctic species that included *L. europaeus*.

These authors regarded *L. europaeus* as a Linnaean species. However, although it is included in the Appendix to Sp. Pl. ed. 2 (1763) it was first described by Jacquin. His description was published in May 1762 before the first volume of Linnaeus's second edition in September 1762, so that chronologically it takes precedence over *L. Scurrula* as a name in *Loranthus* (see Notes 1 and 2). Moreover, as Jacquin was a correspondent of Linnaeus himself and his description was accepted with approval by Linnaeus, it should be regarded as of equal status with Linnaean species.

As a generic starting point Jacquin's description (Jacquin, 1762: 55, 230) has the merit of being based upon a single unambiguous species, of which it states both generic and specific characters (*descriptio generico-specifica*, see Code 1956, Article 41). Jacquin also gave an illustration (Jacquin, 1762: t. 131).

The account of *Loranthus* by Linnaeus, Sp. Pl. ed. 2 (1762), in contrast to Jacquin's deals with several species now referred to several genera. It has no accompanying generic description and can only be associated with the generic description of *Loranthus* in his Gen. Pl., ed. 6, p. 175 (1764) which applies, at least in the main, to the same American genus (*Psittacanthus*) as his original description of 1754, already rejected.

We therefore strongly urge the next Congress to approve the proposals set out formally below. In this way, long-established usage will be conserved and the name *Scurrula* left for the separate genus now recognised.

(73) We propose that the present conservation be deleted and the following substituted:

Nom. cons. prop.:	Nom. rejic. prop.:
Loranthus Jacq. Enum. Stirp. Vindob. 55, 230, t. 3. 1762 T.: *L. europaeus* Jacq.	*Loranthus* L. Sp. Pl. 331, 1753: Gen. Pl. ed. V: 154, 1754 T.: *L. americanus* L. 1753 *Scurrula* L. Sp. Pl. 110, 1753: Gen. Pl. ed. V: 110, 1754 T.: *S. parasitica* L. 1753 *Hyphear* Danser in Bull. Jard. Bot. Buitenzorg III. 10: 319 (1929) T.: *Loranthus europaeus* Jacq.

Note 1: September 1762 is accepted as the date of the publication of Linnaeus, *Species Plantarum*, 2nd ed., volume 1, containing pages 1-784; cf. H. E. Richter, *Codex Bot. Linn.* xxxi (1835).

That Jacquin's *Enumeratio Stirpium pleraque quae sponte crescunt in Agro Vindobonensi Montibusque confinibus* (1762) appeared earlier is evident from Linnaeus's letter of 24 September 1762 (printed in *Caroli Linnaei Epistolae an Nicolaum Josephum Jacquin ex Autographis edidit C.N.J. a Schreibers* 58 no. 21; 1841) in which he refers to Jacquin's previous letters of 28 August and 26 May and sends 'gratias — pro Flora Tua vindelicana'; Linnaeus also mentions 'Loranthum tuum maxime miror tam diversum fructificatione esse a vulgari Visco'. This confirms the statement by Jacquin in his *Observationum botanicarum — Pars* 1, 29 (1764) that his *Enumeratio* came out a few months before the second edition of Linnaeus's

Species Plantarum; 'hanc speciem in opusculo meo de stirpibus agri Vindobonensis paucis ante mensibus quam in altera Specierum suarum editione eandem ederet Linnaeus'. Another statement by Jacquin (in his Collectanea 1; 366; 1786) indicates that his *Enumeratio* probably appeared in early May. From the above it is clear that Jacquin's *Enumeratio* was earlier than Linnaeus, *Species Plantarum,* ed. 2, vol. 1.

(W. T. Stearn)

Note 2: Sprague's choice of *L. Scurrula* L. when in 1929 he put forward his proposals to the Nomenclatural Committee before the Cambridge Congress of 1930 (Proposals by British Botanists 1929: 54, 71) seems to have been based on the false assumption that this species was the first (of the aggregate Old World genus *Loranthus*) to be placed in *Loranthus* (after *L. americanus,* which was to be rejected).

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ON THE NOMENCLATURE HISTORY OF THE GENUS LIBANOTIS

Sophia G. Tamamschian (Leningrad)

The controversy concerning the author of the genus *Libanotis* still persisting in the literature impelled me to trace the nomenclature history of this genus with a view to establishing its true author.

Previous to 1753 the name *Libanotis* was used by a number of authors viz. Rivinius (1699), Ruppius (1726), Heucher (1711-1713), Buxbaum (1721), Walther (1735) and finally Haller (1742). The later author not only gave a brief description of the genus, but also established its distinguishing features, enabling it to be discerned from other genera.

In the list of works used in Species Plantarum, Linnaeus (1753) mentioned Haller's Enumeratio Helvetiae, but *Libanotis* is not considered as a separate genus either in the Species Plantarum or in the Genera Plantarum (1754) as in the Flora Suecica: all the species of *Libanotis* known at that time were included in the genus *Athamantha.* After Linnaeus *Libanotis* was considered to be either a separate genus (Haller 1753, Allioni 1757, 1785, Crantz 1762, Scopoli 1772, Decandolle 1830), or a section or a subgenus of the genus *Seseli* (Grenier et Godron 1848, Drude 1897 and others). In Dalla-Torre's (1903) Genera Siphonogamarum after the name *Libanotis,* as a synonym of a section of the genus *Seseli,* is mentioned Rivinius et Haller.

At present the genus *Libanotis* is recognised by many botanists. However, different authors' names are written after the generic name *Libanotis* in different floras. In some instances it is Hoffmann, in other cases it is Allioni; it may be either Crantz or Linnaeus or Zinn. The latter, being a pupil of Haller and his successor as the professor at the University and director of the Botanic-Garden in Göttingen, adopted his teacher's interpretation and classified *Libanotis* as a separate genus in his Catalogus Plantarum Gottingensis, which was published two months earlier than Allioni's Stirpium praecipuarum littoris et agri Nicaensis, where Libanotis is also treated as a separate genus.

Rothmaler (1952, 1958) without citing any work, writes the author's name after *Libanotis* "Zinn" *). In the sixteenth volume of the Flora USSR (1951, p. 47) as an accidental lapsus calami ("Linn" or "Zinn") Linnaeus is indicated as the author of this genus with a reference to the Catalogus Plantarum Gottingensis, this not being a work of Linnaeus, but, as has been already mentioned, of Zinn. This unfortunate confusion is all the more perplexing in that it was overlooked by E. G. Bobrov, a reputed erudite connaisseur of the life and works of Linnaeus!

Unfortunately the same error and consequent attribution of the authorship of this genus to Linnaeus, who persistently rejected it, was repeated in some other Floras, e.g. Flora of Rumania (1955 v. VI, p. 512), the Flora of Azerbajdzan (1955, v. VI, p. 163), the Flora of Middle Siberia (1957, v. I, p. 488), the Flora of Usbekistan (1959, v. IV, p. 363).

The earliest work issued after the Genera Plantarum (1754) where the genus *Libanotis* was published was the above mentioned work of Zinn. The latter, however, did not add anything new to the diagnosis of the genus that had been contributed by Haller. Having adopted Haller's generic description and having cited both his works (see above), Zinn has attributed the authorship of the genus Libanotis to Haller, while *Athamantha Libanotis* was reduced by him to the rank of a synonym with a reference to the Species Plantarum 1753. The sequence in which Zinn cited: first the Enum. Stirp. Helv. 1742, next the Species Plantarum 1753 and lastly the Enumeratio Plantarum Horti et agri Gottingensis 1753 — suggests that Haller's later work was issued after the Species Plantarum.

In the International Code of Botanical Nomenclature there is no special provision for such a case as this giving the correct method of establishing the priority of the author of a genus. I believe, however, that it would be in accordance with the spirit of the Code to take into account only the works published after the Genera Plantarum (1754) so far as the authors of genera are concerned. The genus Libanotis with its authors should then be written as follows: *Libanotis* [Haller] Zinn.

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THE TYPIFICATION OF THE GENUS MALVASTRUM

J. van Borssum Waalkes (Oegstgeest)

In the latest edition of the list of nomina generica conservanda et rejicienda (Rickett & Stafleu 1959, p. 310), in which *Malvastrum* A. Gray (1849, p. 21) is cited as conserved against *Malveopsis* Presl (1845, p. 449), *Malvastrum coccineum* (Nutt.) A. Gray is still cited as the type of the genus *Malvastrum*. This type was selected by M. L. Green (1935, p. 145), no doubt because it was the first species which A. Gray mentioned under his new genus.

Kearney (1947, 1955) has twice pointed to the difficulties resulting from accepting *M. coccineum* (Nutt.) A. Gray as the lectotype. In fact that species and the next two mentioned by A. Gray were later transferred to the genus *Sphaeralcea* St. Hil. I do not intend to go into the arguments regarding this transference, which is supported by most modern American botanists, since I have no sound knowledge of the last-named genus, which is restricted to the New World. The fourth species listed by A. Gray has been transferred to the genus *Malacothamnus*, whereas the species last mentioned, viz. *M. angustum* A Gray, has become the type of the genus *Sidopsis* Rydb.

The remaining species mentioned by A. Gray in his first publication dealing with *Malvastrum* are consequently without status under the Code, and this would necessitate the creation of a new genus. These species are *M. wrightii* A. Gray [nowadays referred to *M. aurantiacum* (Scheele) Walp.], *M. carpinifolium* A. Gray [actually a misinterpretation of *Sida carpinifolia* L. f., which is a true *Sida* species; its correct name under *Malvastrum* is *M. coromandelianum* (L.) Garcke *)], and *M. spicatum* (L.) A. Gray [nowadays referred to *M. americanum* (L.) Torr.].

M. coromandelianum (L.) Garcke and *M. americanum* (L.) Torr., undoubtedly both of American origin, have, for more than a century, become widely distributed throughout the tropics, and are now mentioned in most tropical floras. A change of

*) A. Gray corrected his mistake in a later publication (1852, p. 16), replacing his wrong name by *M. tricuspidatum* (R. Brown) A. Gray, based on *Malva tricuspidata* R. Brown, which is a synonym.

the generic name, which might cause much confusion, could be avoided by designating another lectotype for the genus *Malvastrum*. I here support Kearney in proposing as such *M. coromandelianum* (L.) Garcke, which is the commonest and best known species.

For further particulars the reader may be referred to Kearney's publications.

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NOMENCLATURAL NOTES ON THE ORCHIDACEAE I

Robert L. Dressler (St. Louis)

This note is written to cover a few nomenclatural problems which have appeared in the course of systematic studies of the Orchidaceae, subtribe Epidendrinae. Students of the orchids have too often changed well established names not only where the International Code requires this, but where the change is permitted but not required. The author feels that such changes are to be avoided wherever possible, and especially so in groups of horticultural importance. The genus *Scaphyglottis*, discussed below, is such a case. Several widely used specific epithets have been replaced, when the careful selection of a neotype might have been the wiser course of action.

Subfamily **Epidendroideae** nom. nov. Subfamily *Kerosphaeroideae* Garay, Bot. Mus. Leafl. 19: 87. 1960.

The author concurs with Garay's recent suggestion that five subfamilies be recognized in the Orchidaceae. The rules adopted by the 1959 Congress, however, specify that subfamily names be based on the names of included genera, so that the name Kerosphaeroideae is illegitimate. Under these rules (Art. 19, amended) Ophrydoideae Garay automatically becomes Orchidoideae (without author), since that subfamily includes the type genus of the family. Purists might prefer the spelling "Orchioideae," but if we are to maintain a misspelling, let us be consistent. The subfamily Apostasioideae was validly published by Wettstein in 1935 (Handbuch Syst. Bot. 4th ed. p. 1040). There is also some doubt that the Cypripedioideae can be treated as a new subfamily in 1960, but this is a minor point. The name is correct.

With the treatment of the inclusive tribe Epidendreae Lindley as a subfamily, it becomes reasonable and desirable to distinguish tribes within this subfamily. The original four tribes of Lindley, Gastrodieae, Epidendreae, Malaxideae and Vandeae,

need little revision to form four natural, though closely interrelated tribes, defined largely on the basis of polliniar structure. The recognition of these tribes will require the use of the name Malaxidinae in place of Liparidinae Bentham; and Vandinae must replace the familiar Sarcanthinae Bentham. For further discussion of these groups see Dressler and Dodson (Ann. Missouri Bot. Gard. 47: 25-68. 1960).

Scaphyglottis Poep. & Endl., Nov. Gen. ac Sp. 1: 58. 1835. Proposed generic lectotype ?*Fernandezia graminifolia* Ruíz & Pavón, Syst. Veg. Fl. Peruv. et Chil. 1: 241. 1798.

Williams (Ceiba 2: 202. 1951) has suggested that the name *Scaphyglottis* should be replaced by *Cladobium* Lindley (1836), because most of the species described by Poeppig and Endlicher are referable to *Maxillaria* Ruíz & Pavón. Later (Ceiba 5: 152. 1956) Williams has suggested that *Scaphyglottis* should be conserved. I believe that *Scaphyglottis* can be maintained in the customary sense without resort to conservation. While the original description may be more applicable to *Maxillaria* than to *Scaphyglottis* as it is now understood, there is nothing sacred about descriptions, as such. The genus ultimately rests on a type species, and any of the species described by Poeppig and Endlicher may be chosen as a lectotype. Of the two original species which are referable to *Scaphyglottis* in the customary sense, *S. conferta* (Ruíz & Pavón) Poep. & Endl. is much the better illustrated, but *S. graminifolia* (Ruíz & Pavón) Poep. & Endl. is known to be represented by an actual specimen in the Ruíz and Pavón herbarium, and is thus a better choice for lectotype. Both species should be readily identifiable when adequate material is available from Peru. It is not clear whether or not Williams considered *Cladobium* to have priority over *Scaphyglottis,* but I can find no evidence that it does. Lindley, himself, took up *Scaphyglottis,* reduced *Cladobium* to synonymy, and implied that *Scaphyglottis* had priority of actual publication (Bot. Reg. 22: sub t. 1901. 1836). A further reason for typifying *Scaphyglottis* and using this name in preference to *Cladobium* Lindley, is that the name *Cladobium* was later used by Schlechter for a genus of the subtribe Spiranthinae. While Schlechter's genus was apparently never validly published, several references to this name are found in his later papers.

The circumscription of *Scaphyglottis* and its relationship to other genera present several problems, but these are primarily systematic problems, and must await monographic study of the entire complex.

Pinelia Lindley (1853) vs. **Pinellia** Tenore (1830).

Garay (Svensk Bot. Tidsk. 47: 222. 1953) has noted the close relationship of *Pinelia* Lindley and *Homalopetalum* Rolfe, and suggested that *Homalopetalum* should be united with *Pinelia.* This suggestion, however, does not consider the existence of the earlier name *Pinellia* Tenore, which is applicable to a valid genus of the Araceae. Under Article 75 of the Code "When two or more generic names are so similar that they are likely to be confused, ... they are to be treated as variants, which are homonyms when they are based on different types." The two names in question are indeed exceedingly similar, though they honor different persons. The type of *Pinelia* Lindley was an incomplete specimen, and very little material of this genus has become available since its original description, so that the status of the genus is still uncertain. The species assigned to *Homalopetalum* are much better known. If these two groups are congeneric, it would seem preferable to treat *Pinelia* Lindley as a later homonym, and maintain *Homalopetalum.* No new combinations are offered here, as systematic studies are in progress. This note is intended only to discourage undesirable new combinations in *Pinelia.*

REPORT OF THE THIRD MEETING OF THE INTERNATIONAL COMMISSION FOR THE NOMENCLATURE OF CULTIVATED PLANTS HELD AT CAMBRIDGE, ENGLAND, JUNE 3-6, 1960

PRESENT

Dr. R. de Vilmorin (Chairman), Services scientifiques Vilmorin-Andrieux, Verrières-le-Buisson (S. & O.), France.

Mr. J. S. L. Gilmour (Rapporteur), University Botanic Garden, Cambridge, England.

Dr. H. R. Fletcher (Secretary), Royal Botanic Garden, Edinburgh, 3, Scotland.

Agricultural Representatives

Dr. J. W. Gregor, Scottish Plant Breeding Station, Pentlandfield, Roslin, Midlothian, Scotland.

Mr. F. R. Horne, National Institute of Agricultural Botany, Huntingdon Road, Cambridge, England.

Dr. P. S. Hudson, Commonwealth Bureau of Plant Breeding and Genetics, Cambridge, England.

Dr. G. Nilsson-Leissner, Swedish State Seed Testing Station, Stockholm 19, Sweden.

Dr. F. E. Nijdam, Stichting voor Plantenveredeling, Nude 66, Wageningen, Netherlands.

Mr. T. A. Russell, Royal Botanic Gardens, Kew, Richmond, Surrey, England.

Dr. M. G. Weiss, Field Crops Research Branch, U.S. Department of Agriculture, Beltsville, Maryland, U.S.A.

Forestry Representatives

Dr. E. L. Little, Jr., Forest Service, U.S. Department of Agriculture, Washington 25, D.C., U.S.A.

Mr. J. D. Matthews, Forest Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey, England.

M. P. Bouvarel, École Nationale des Eaux et Forêts, 14 Rue Girardet, Nancy, France (Representing M. J. Pourtet).

Horticultural Representatives

Dr. H. R. Fletcher, Royal Botanic Garden, Edinburgh, 3, Scotland.

Mr. J. S. L. Gilmour, University Botanic Garden, Cambridge, England.

Dr. N. Hylander, Institute of Systematic Botany, University of Uppsala, Uppsala 1, Sweden.

Dr. G. H. M. Lawrence, Bailey Hortorium, Cornell University, Ithaca, New York, U.S.A.

Mr. R. Maatsch, Hochschule für Gartenbau und Landeskultur, Burgweg 11, Hannover-Herrenhausen, Germany.

Mr. J. M. S. Potter, National Fruit Trials, Brogdale Farm, Faversham, Kent, England.

Representating the Division of Botany of the I.U.B.S.

Dr. F. A. Stafleu, International Association for Plant Taxonomy, 106 Lange Nieuwstraat, Utrecht, Netherlands.

APOLOGIES FOR ABSENCE

Dr. R. D. Johnston, Forest Botanist, Forestry and Timber Bureau, Canberra, Australia.

Dr. W. Langner, Bundesanstalt für Forst- und Holzwirtschaft, 24a Schmalenbeck über Ahrensberg, Germany.

M. J. Pourtet, École Nationale des Eaux et Forêts, 14 Rue Girardet, Nancy, France.

Dr. B. K. Boom, Instituut voor Veredeling van Tuinbouwgewassen, Postbus 7, Wageningen, Netherlands.

Dr. B. P. Pal, Indian Agricultural Research Institute, New Delhi, India.

Dr. A. Thorsrud, Institut for Blomsterdyrking, Norges Landbruksheiskole, Vollebekk, Norway.

REPORT

After the Chairman had welcomed members of the Commission, and after the Rapporteur had outlined a suggested programme for the meeting, the following items were discussed:

(1) *The International Commission for Horticultural Nomenclature and Registration of the International Society for Horticultural Science* (discussed by the Horticultural Members of the Commission).

Dr. R. de Vilmorin and the 8 representatives of horticulture on the International Commission for the Nomenclature of Cultivated Plants already appointed by the Council of the I.S.H.S. at its meeting at the Hague in March 1960 — Gilmour, Fletcher and Potter (of the U.K.), Maatsch (Germany), Boom (Netherlands), Hylander (Sweden), Lawrence (U.S.A.), and Thorsrud (Norway) — decided to recommend to the Executive Committee of the I.S.H.S.:

(1) the appointment to the Commission for Horticultural Nomenclature and Registration of the following: Prof. Reid M. Brooks (U.S.A.); Dr. Henry Skinner (U.S.A.); Prof. S. K. Wellensieck (Netherlands); Dr. Harry Kaminota (Hawaii); R. E. Harrison (Australia); M. Meilland (France); F. Benary (Germany).

(2) (a) that Prof. Hara, Faculty of Science, University of Tokyo, Hongo, Tokyo be approached regarding a suitable representative from Japan.

(b) that Dr. R. S. Dyer, Director of the Botanical Survey of the Union of South Africa, Pretoria, be approached regarding a suitable representative for S. Africa.

(c) that Dr. Tsitsin, Botanic Garden of the Academy of Sciences, Moscow, be approached regarding a suitable representative for Russia.

(d) that Prof. Lecrenier, Dept. of Horticulture, University of Brussels, be approached regarding a suitable representative for Belgium.

(2) *The adoption of the Code for Agriculture, Horticulture and Forestry.*

The Commission agreed that, while it was desirable for the Code to be adopted officially by bodies representing Agriculture, Horticulture, and Forestry, such adoption was not the concern of the Commission, and that there was no need to refer to it in the Code.

It was decided to emend the following paragraph on pp. 8-9 in the preface of the 1958 edition of the International Code of Nomenclature for Cultivated Plants:

"The Code becomes effective from the date of its publication, and is submitted for endorsement for horticulture to the Fifteenth International Horticultural Congress to be held at Nice in April 1958, for Agriculture to the Food and Agriculture Organization of the United Nations, and for Forestry to the International Union of Forest Research Organizations."

to read

"The Code becomes effective from the date of its publication".

(3) *Stabilization of Specific Names.*

Committees were appointed to develop lists of plants for which the species epithet should be stabilized in each of the following groups of plants:

(1) Agricultural species (including vegetable crops and weeds but excluding fruits)

(2) Forest species

(3) Horticultural species (including fruits, drugs, medicinal plants and plants used for perfumery).

The Committees charged with the development of these lists consist of

A. For Agriculture — F. R. Horne, T. A. Russell and W. G. Weiss (Chairman)

B. For Forestry — J. D. Matthews, M. J. Pourtet, E. L. Little Jr. (Chairman)

C. For Horticulture — G. H. M. Lawrence, R. Maatsch, H. R. Fletcher (Chairman).

The Committees met and were advised by their colleagues on the Commission.

The following was the result of the discussions:

(1) It was decided that the lists should be confined as far as possible to species considered to be of major importance.

(2) The criteria that would justify stabilization of specific names were agreed to.

(3) It was agreed that lists of species for which stabilization is desirable should be submitted to the respective three Chairmen as quickly as possible. (For instance the Agricultural Committee thought it possible that lists of Agricultural species could reach M. G. Weiss by 31st. July, 1960).

(4) It was agreed that the final three lists should then be sent to the Secretary of the Commission who would co-ordinate them into one alphabetical list which would be sent to Dr. Stafleu as Secretary of the General Committee on Botanical Nomenclature.

(5) It was agreed that some names would be sent to Dr. Stafleu for study by August 1st. 1960, in advance of the final list.

(6) It was agreed that any comments on the nomenclature of the species listed should not be included in the lists but should be sent separately to Dr. Stafleu.

(4) *International and National Registration Authorities.*

The Commission was given the present position of Registration Authorities as understood by the Secretary. It is as follows:

International Registration Authorities

Appointed by 1956 Congress	
Tulipa: hardy bulbous and tuberousrooted plants (excluding Dahlia, Gladiolus, Lilium and Narcissus)	Koninklijke Algemene Vereniging voor Bloembollencultuur, 45 Wilhelminastraat, Haarlem, Holland.
Iris (excluding bulbous Irises)	The American Iris Society.
Ilex	The Holly Society of America.
Rosa	The American Rose Society.
Hemerocallis	The Hemerocallis Society of America.
Narcissus: Rhododendron (including Azalea); Delphinium (perennials only)	The Royal Horticultural Society, Vincent Square, London, S.W. 1.
Chrysanthemum (perennials only)	The National Chrysanthemum Society, 83 Chesterfield Road, Barnet, Herts.
Appointed by F.A.O.	
Forestry cultivars of Populus	The International Poplar Commission, Viale delle Terme di Caracalla, Rome.
Appointed by 1958 Congress	
Cyclamen	Laboratorium voor Tuinbouwplantenteelt, Wageningen, Netherlands.
Callistephus	Herrenhausen Institut für Zierpflanzen, Hannover-Herrenhausen, Germany.
Matthiola Dianthus Acacia Hydrangea	La Société Nationale d'Horticulture de France, 84 Rue de Grevelle, Paris (VII).
Leptospermum and Hebe	Royal New Zealand Institute of Horticulture (Inc.), P.O. Box 450, Wellington, New Zealand.
Gesneriaceae (excluding Saintpaulia)	The American Gesneria Society (Paul Arnold), 76 South Hotchkiss Street, Binghamton, N.Y.
Begonia	The American Begonia Society, 3628 Revere Avenue, Los Angeles 39, California. (Mrs. Korts).
Lilium	The Royal Horticultural Society, Vincent Square, London, S.W. 1.
Malus (ornamental species) Philadelphus	Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass., U.S.A.
Viburnum	National Arboretum, Washington 25, D.C. U.S.A.
Syringa	Arthur Hoyt Scott Horticultural Foundation, Swarthmore College, Swarthmore, Penn., U.S.A.

National Registration Authorities

Potatoes, Herbage Plants and Horticultural Crop Cultivars of Scottish Origin	Scientific Services, Department of Agriculture for Scotland, East Craigs, Edinburgh, 12.
Australian Plants (excluding groups covered by I.R.A.'s)	Society for Growing Australian Plants, 4 Regworth Courth, Highett Street 21, Melbourne, Victoria, Australia (Mr. Wilson).

Hardy Woody Plants (except Ilex, Camellia, Rosa and Rhododendron) — cultivars in the U.S.A.	American Association of Botanic Gardens and Arboretums, c/o Arnold Arboretum, Jamaica Plain, Mass., U.S.A.
Agricultural and Field Horticultural Crops including Potatoes originating in England and Wales	National Institute of Agricultural Botany, Huntingdon Road, Cambridge.
Vegetables and Fruits — cultivars in the U.S.A.	American Society for Horticultural Science, Michigan State University, East Lansing, Michigan.
Vegetables and Fruits — cultivars in the Netherlands	Institute for Horticultural Plantbreeding Postbus 16, Wageningen, Holland.
All Agricultural Crops — cultivars in the Netherlands	Institute for Research on Varieties of Field Crops, Postbus 32, Wageningen, Holland.

It was agreed

1. not to use the terms *official* or *recognised* in connection with Registration Authorities in any Article, Recommendation or Appendix of the Code.
2. to make clear in the Code that registration of a cultivar counts as publication if accompanied by a description of the cultivar.
3. to make clear in the Code that there are two "levels" of Registration, one including testing and one comprising only the registration of names and descriptions, and to emphasize more strongly the importance of testing where practicable.
4. to write to the Director General of F.A.O. the following letter:

"Dear Sir,

International Code of Nomenclature for Cultivated Plants Registration of Cultivar (Variety) Names

The International Commission for the Nomenclature of Cultivated Plants of the International Union of Biological Sciences, met recently at Cambridge, England, when consideration was given to the registration of cultivar (variety) names.

Procedure for the appointment or agreement of National Registration Authorities is mentioned in Article 51 in the Code. In the discussion of the Commission it was assumed that the main agricultural and vegetable crops in most countries would be registered by the crop-testing organisation recognized by the Government of that country. For instance, The Scientific Services, Dept. of Agriculture for Scotland, East Craigs, Edinburgh 12, is recognised as the National Registration Authority for Potatoes, Herbage Plants and Horticultural Crop Cultivars of Scottish origin, and the National Institute of Agricultural Botany, Huntingdon Road, Cambridge, England, is recognised as the National Registration Authority for Agricultural and Field Crops, including Potatoes, originating in England and Wales.

The Commission was of the opinion that it is most desirable, if not essential, that there should be an appropriate International Authority so that registered names could be filed centrally for reference purposes.

The Commission resolved that an approach should be made to the Food and Agriculture Organisation of the United Nations, to ask if they would be prepared to collect lists of cultivar (variety) names of the agricultural crops, including vegetable crops, registered in the different countries, and in addition to list names of cultivars in current use which are not incorporated in the list of registered varieties. In this way it would be possible to maintain a single list of the names registered in every country for each of the important crop plants used for food production. It might also be possible to record whether (A) the cultivar (variety) was registered only on the basis of having a distinct name, or (B) that distinctness was determined by critical comparison with other cultivars (varieties), or (C) that the cultivar (variety) was tested for agronomic or other economic qualities.

I should be most grateful if you would consider this application and if there is any further information you wish to receive about the proposed procedure will you please let me know.

There is a further point. Whilst the International Commission for the Nomenclature of Cultivated Plants believes that it has a complete record of the International and National Registration Authorities for horticultural and ornamental plant cultivars, it has a by no means accurate record of Registration Authorities for the cultivars of agricultural and sylvicultural plants. Moreover, it sees no way of obtaining this record save through the assistance of F.A.O. Again, therefore, I should be most grateful if you would notify of all those National and International Bodies you know to be concerned with the registration of agricultural and sylvicultural plant cultivars.

I am,

Yours very truly,"

5. to write to the American Rose Society pointing out that the Society is not registering cultivar names of Roses in accordance with the Articles of the Code.

(5) *Consideration of Proposals for Emendations and Additions to the 1958 Edition of the Code.*

The proposals considered had been received from:

F. R. McQuown, J. S. L. Gilmour, P. S. Green & J. Keenan, E. G. Voss, E. E. Sherff, B. K. Boom, M. G. Weiss, G. H. M. Lawrence (on behalf of the American Horticultural Society's Committee for the Nomenclature of Cultivated Plants), G. M. Schulze and G. Buchheim (on behalf of the German Horticultural Nomenclature Committee).

Each proposal was thoroughly discussed and various emendations were agreed for incorporation in the next edition of the Code.

(6) *Future Membership of the Commission.*

Commission members are appointed by the International Union of Biological Sciences. The I.U.B.S. will consult:

1. the International Society for Horticultural Science in respect of members to represent horticulture,
2. F.A.O. for members to represent agriculture, and
3. the International Union of Forest Research Organisations for members to represent forestry.

(7) *Future Programme of Work.*

The Editorial Committee of the Commission which edited the 1958 Edition of the Code was re-elected, except that J. D. Matthews was asked to take the place of E. L. Little Jr., who was unable to serve. The Committee agreed to meet in Edinburgh on the 12th-13th-14th October.

A draft of the emended text would be submitted to all Commission members, and a new edition would be published by the International Association for Plant Taxonomy (I.A.P.T.) early in 1961.

(8) *Any Other Business.*

The following resolutions were proposed and adopted:

1. *By the entire Commission.*
   A resolution on the following lines: — That the Commission ask the Fruit Commission of the International Society for Horticultural Science to endeavour to stimulate and co-ordinate the National Registration of temperate fruit cultivars.
2. *By the Horticultural members of the Commission.*
   That the International Society for Horticultural Science establish a Commission for the taxonomy of cultivated plants, appoint Dr. H. R. Fletcher as Chairman with power to make nominations to the Society for its membership, and organise a symposium on the taxonomy of cultivated plants at the next Horticultural Congress.

H. R. Fletcher, Secretary.

NEWS AND NOTES

IVAN MURRAY JOHNSTON (1898-1960)

It was distressing indeed, to learn about the sudden death of Ivan Murray Johnston, Associate Professor of Botany at Harvard University and late Associate Director of the Arnold Arboretum. My relations with him go back to the time when I was still a graduate student — a period during which one is particularly susceptible to and ready for new contacts with research workers from abroad. Whenever the opportunity presented itself, I found it stimulating to meet him, from time to time, in the years thereafter. Particularly during the thirties (when Johnston worked also for some time at the Utrecht Herbarium), we were frequently in touch.

Johnston exemplified the conservative and thorough taxonomist of the Gray Herbarium school to me. His work, as far as I am familiar with it, on the Boraginaceae, the Chilean, American desert and Chinese floras, etc., was always according to the best traditions of plant taxonomy.

A more extensive biographical sketch will follow in the columns of Taxon; I wanted, however, to make this brief personal statement, also as it has been a matter of some concern to me that I could necessarily not be of support to Johnston during recent years when a number of circumstances made his life and position so much less pleasant than they must have been previously. May I also extend our sympathy to his wife and children.

J. Lanjouw

J. C. DE MORAES VASCONCELOS (1917—1959)

Jayme Coêlho de Moraes Vasconcelos, nasceu no Engenho "Criméia", no dia 4 de maio de 1917, no Município de Nazaré da Mata, no Estado de Pernambuco. Era filho de Laurino Gomes de Moraes Vasconcelos e Maris Coêlho de Moraes Andrade. Em 1938, como aluno laureado da turma, terminou o Curso Superior da Escola Superior de Agricultura de Pernambuco, recebendo o diploma de Engenheiro Agrônomo. Antes de ser nomeado professor para a Escola, exerceu as seguintes funções: Auxiliar de Ensino e Encarregado do Departamento de Biologia da Escola Superior de Agricultura de Pernambuco. Ajudante de 2.ª classe da "Secção de solos" no Instituto de Pesquisas Agronômicas do Estado de Pernambuco. Finalmente, por portaria baixada em 28 de fevereiro de 1939, pelo Sr. Secretário da Agricultura do Estado da Paraíba, foi contratado professor de Botânica Geral e Especial da Escola de Agronomia do Nordeste. Com a federalização da Escola, a partir de dezembro de 1951, foi nomeado Professor Catedrático, padrão "O" permanecendo no cargo, com zêlo e dedicação invulgares até falecer, fato ocorrido no dia 1 de dezembro de 1959. Deixou um grande herbário e foi homenageado varias vezes em diversos taxon.

J. Angely

TYLOSPORA NOM. NOV.

Tylospora Donk, *nom. nov.*, (Hymenomycetes, Corticiaceae) basionym, *Tylosperma* Donk *in* Fungus **27**: 28. 1957.

It became necessary to make the above change of name when it was recently found that *Tylosperma* Donk was preoccupied by *Tylosperma* Botsch. *in* Not. syst. Herb. Inst. bot. Acad. Sci. Uzbekistan **13**: 17. 1952, Rosaceae (citation checked by Mr. A. A. Bullock). *Tyliosperma* Mamay *in* Prof. Pap. geol. Surv., Washington **254-D**: 85. 1954, Fossil Plants, Pteridospermae, should perhaps not be rated as another homonym. The derivation is not mentioned, but "Tylio-" would seem to stand for *τύλιον*, a diminutive of *τύλος*, and thus would be derived from a different word than the first portion of the name *Tylosperma*. A further homonym, this time of later date, is *Tylosperma* Leeuwenberg *in* Acta bot. neerland. **7**: 323, 432. 1958, Gesneriaceae.

In connection with this change of name the following new specific combinations are also necessary: **Tylospora asterophora** (Bonord.) Donk, *comb. nov.* (basionym, *Hypochnus asterophora* Bonord., Handb. allg. Mykol. 160. 1851) and **Tylospora fibrillosa** (Burt) Donk, *comb. nov.* (basionym, *Hypochnus fibrillosus* Burt *in* Ann. Missouri bot. Gdn **3**: 238. 1916).

M. A. Donk

TYLOPSACAS NOM. NOV.

Tylopsacas Leeuwenberg, *nom. nov.*, basionym: *Tylosperma* Leeuwenberg, Act. Bot. Neerl. **7**: 323, 432, f. 33. 1958; not Botsch, cited above by M. A. Donk.

As stated by Donk the name *Tylosperma* was preoccupied by Botschantzev. This makes it necessary to propose a new name for this genus of the Gesneriaceae, and results in the following new combination:

Tylopsacas cuneata (Gleason) Leeuwenberg (basionym: *Episcia cuneata* Gleason, Bull. Torrey Bot. Cl. **58**: 467. 1931).

Etymology: τύλος, pustule; ψαχάς grain, as its seeds are tuberculate.

A. J. M. Leeuwenberg

NOMINA CONSERVANDA PROPOSITA

(74) **Columellia** *Ruiz et Pavon*, Prodr. Fl. Peruv. Chil. 3: *t. I.* 1794 (*Columelliaceae*), *versus Columella* Loureiro, Fl. Cochinch. 85. 1790 (nom. rejic. vs. *Cayratia* Jussieu 1818, nom. cons.).

Columellia Ruiz et Pavon 1794 (*nom. cons. prop.*).

Typus: *C. oblonga* Ruiz et Pavon (lectotypus, vide Bullock, Kew Bull. 14: 41. 1960).

There can be no doubt that *Columellia* and *Columella* are homonymous orthographic variants and preservation of the former name requires conservation. *Columella* Loureiro is already a *nomen rejiciendum* against its nomenclatural synonym *Cayratia* Jussieu and is therefore effectively illegitimate, but it retains its priority as an earlier homonym.

Uluxia Jussieu (Dict. Sc. Nat. 10: 103. 1818) was proposed as a substitute for *Columellia* Ruiz et Pavon, but no one has adopted this name and there are no binomials under it. *Columellia*, on the other hand, has been in undisputed use since its publication in 1794. The genus includes less than a dozen species, all from South America, but it has some morphological importance and is the type of the family name *Columelliaceae*. The family was described by D. Don (Edinburgh New Phil. Journ. 6: 46) in 1829 and has been accepted in all general works and other relevant literature ever since that date.

Columella Loureiro 1790 (nom. rejic. vs. *Cayratia* Jussieu 1818; nom. rejic. prop. vs. *Columellia* Ruiz et Pavon 1794).

Columella Loureiro was utterly neglected (all authors having referred its species to *Vitis* Linnaeus 1753) until it was resuscitated by Merrill (Philipp. Journ. Sc., Bot. 11: 133) in 1916. Thereafter it was adopted by Rehder (1921, 1927), Craib (1926), Masamune (1930), Alston (1931), Hosakawa (1935) and Elmer (1939), all of whom published new combinations or new names under it. Those published by the last three authors are illegitimate, for the proposal to conserve *Cayratia* against *Columella* was agreed by the Cambridge (1930) Congress. In the second (1956) edition of his *Manual of Cultivated Trees and Shrubs*, Rehder adopted the name *Cayratia* in place of *Columella*.

It is thus clear that acceptance of the proposal to conserve *Columellia* Ruiz et Pavon can have no unfortunate effect, and will serve to legitimize current practice.

Proposed by: A. A. Bullock (Kew).

(75) Proposal to conserve the generic name **Aponogeton** L.f. (*Aponogetonaceae*) versus *Aponogeton* Hill (*Potamogetonaceae*).

Aponogeton L.f., Suppl. 32 (1781), *nom. cons. prop.*

Holotypus: *A. natans* (L.) Engl. & K. Krause, Engl. Pflanzenr. IV. 13: 11 (1906) [*Saururus natans* L., Mant. 227 (1771)].

Adopted by: All authors since publication.

Aponogeton *Hill*, Herbal 480, t. 69 (1756) *nom. rej. prop.*

Holotypus: *A. cornutum* Hill, *loc. cit.* [syn. tax. *Zannichellia palustris* L. (1753)].

Discussion: Hill introduced the name *Aponogeton cornutum* (*loc. cit.*) for the plant which, he stated, was *Zannichellia palustris* of Linnaeus (Sp. Pl. 969. 1753). Thus it immediately became illegitimate. Hill gave no explanation for his change of name.

Linnaeus fil. later published a description of a new genus, *Aponogeton* (*loc. cit.*), containing two species, *A. monostachyon* and *A. distachyon* (*loc. cit.* 214-5). A synonym of the first species was *Saururus natans* L. (*loc. cit.*), *Saururus* L. however, was, and is, a genus of the family *Piperaceae*, but the specific epithet has priority over that of *A. monostachyon*. Edgeworth incorrectly referred this species to *Spathium* Lour. (Fl. Cochin. 217. 1790), now a synonym of *Saururus* L. (Journ. As. Soc. Beng. 11: 145. 1842; and Calc. Journ. Nat. Hist. 3: 533. 1843).

Conservation of *Aponogeton* L.f. will thus legitimise a long-used and universally accepted homonym of a name which was illegitimate on publication, and is also the base of a very well-known family name.

Proposed by: Susan Carter (Kew).

A.E.T.F.A.T.-INDEX 1959

L'A.E.T.F.A.T.-Index 1959 est sorti de presse. Conçu de la même façon que les précédents, il contient tout ce qui a paru durant l'année 1959 concernant la botanique systématique africaine et malgache prise au sens large.

L'A.E.T.F.A.T.-Index mentionne, en plus des taxa nouveaux, les divisions infraspécifiques, les basionymes des combinaisons nouvelles avec renvoi à la combinaison, l'iconographie ainsi que de nombreuses références de révisions et de travaux intéressants au point de vue taxonomique.

Volume de 55 pages, cet Index contient près de 2.000 références rien que pour 1959! Il coûte 125 francs belges ou 18 shillings ou 12,50 NF français.

On peut se le procurer en écrivant à A.E.T.F.A.T.-Index, Lab. Bot. Syst. U.L.B., 28, av. P. Héger, Bruxelles 5, Belgique.

* * *

"We have pleasure in announcing the publication of the *A.E.T.F.A.T.-Index* 1959. This *Index* contains references to all that has been published during 1959 on the taxonomic botany in a wide sense of Africa and Madagascar.

The *A.E.T.F.A.T.-Index* mentions new taxa, including infraspecific divisions, the basionyms of new combinations with references to the place of publication, the iconography and it also gives references to revisions and papers of taxonomic interest.

This booklet of 55 pages contains nearly 2.000 references for 1959 only! It costs 125 Belgian francs or 18 shillings or 12,50 NF french francs.

Copies can be ordered by writing to A.E.T.F.A.T.-Index, Lab. Bot. Syst. U.L.B., 28, av. P. Héger, Bruxelles 5, Belgique."

GENERAL COMMITTEE ON BOTANICAL NOMENCLATURE

Nomina conservanda of Phanerogams.

On 7 July 1960 the General Committee approved the proposed conservation of the names 2968 *Ricotia* L., 3657 *Lotononis* (DC) Ecklon et Zeyh., 5278 *Erythrospermum* Lam., 6208 *Pernettya* Gaud., 6212 *Arctostaphylos* Adans., 6361 *Manilkara* Adans.; sub 6368 *Planchonella* Pierre, 7665 *Anemopaegma* Mart., 7669 *Phaedranthus* Miers; 7250 *Dracocephalum* L. (T.: *D. moldavica* L.). These names have now standing as nomina conservanda under Article 15 of the Code.

The General Committee approved the rejection of the proposals as enumerated in the summary on p. 17 of the report from the Committee for Spermatophyta (Taxon 9: 14-17, 1960) with the exception of the proposal on *Schima*. The General Committee decided to refer the proposal on *Schima* Blume 1825 back to the Committee for Spermatophyta. The majority of the General Committee is of the opinion that in order to retain *Schima* Blume 1825, conservation is desirable. The status of *Schima* Blume 1823 being uncertain, the necessity of conservation is stressed.

Nomina conservanda of Algae.

The General Committee approved the proposed conservation of *Stilophora, Spermatochnus, Microcystis, Catenella, Botryocladia, Chlorococcum* and *Haematococcus* (see Taxon 8: 88. 1959). These names now have standing under Article 15 of the Code.

F. A. Stafleu, Secretary.

SUBCOMMITTEE FOR FAMILY NAMES

Mr. A. Burkart, San Isidro, Argentina, has resigned his position as member and chairman of the subcommittee. In order to fill the vacancy the members of the subcommittee have co-opted Mr. J. E. Dandy, British Museum, Natural History, London.

G. Buchheim, Secretary.

TREES AND SHRUBS OF MEXICO

The Smithsonian Institution has been asked to consider reprinting Standley's *Trees and Shrubs of Mexico*, (Contr. U.S. Nat. Herb., vol. 23, pts. 1-5, pp. 1-1721), which has been out of print for years.

The Institution would welcome expressions of interest in such a reprint, the cost of which would be approximately $ 20.

Address inquiries to Editorial and Publications Division, Smithsonian Institution, Washington 25, D.C.

NOTICES OF BOOKS

Owing to half a year's absence of the present editor of this column, his task will be temporarily taken over by Mr. E. A. Mennega, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands, to whom all correspondence connected with this column should be directed.

K. U. Kramer

Bibliography of the British flora

N. Douglas Simpson: A. bibliographical index of the British flora, including floras, herbals, periodicals, societies and references relating to identification, distribution and occurrence of Phanerogams, vascular Cryptogams and Charophytes in the British Isles.

Privately edited by the Compiler (limited edition), Bournemouth, 1960. (xix + 429 pp.; with separate indexes of literature arranged according to taxonomic groups, floras, herbals, periodicals and plantlore, and plant records, with special lists for the different counties. Author's address: Maesbury, Cavendish Road, Bournemouth, England. Price ?).

Flora of Poland

Flora Polska, rośliny naczyniowe Polski i ziem ościennych, ed. by W. Szafer & B. Pawlowski. Vol. VIII. (*Papilionaceae - Araliaceae*). Warsaw, 1959. (428 pp., 51 plates; price zl. 65.—).

Carex of Spain

C. Vicioso: Estudio monográfico sobre el género *Carex* en España. Publ. as Bol. no. 79 of the Instituto Forestal de Investigaciones, Madrid, 1960. (205 pp., 10 plates; a revision of *Carex* in Spain, similar to the former works of the author, together with some critical notes. All native taxa are described and some illustrated. With key and brief indications of distribution. Price 115 pts.).

Amphi-Atlantic plants

E. Hultén: The Amphi-Atlantic plants and their phytogeographical connections. Publ. as Vol. 7, no. 1, of Kungl. Svenska Vetensk.-Ak. Handl., 4th series, Stockholm, 1958. (340 pp., 279 maps; for each species a distribution map with a brief comment is given; an extensive bibliography is added. Price Skr. 78.50).

Flora of the Canary Islands

E. R. Sventenius: Additamentum ad Floram Canariensem. Publ. by the Nat. Spanish Inst. of Agronomic Inv., Madrid, 1960. (v + 93 pp., 37 plates in black-and-white and colour, numerous photographs; many new species from various groups of Angiosperms, with keys to certain groups. In latin).

Flora of Albany and Bathurst

A. R. H. Martin & A. R. A. Noel: The flora of Albany and Bathurst, incorporating a general survey of the vegetation and an annotated check list of the vascular plants. Publ. by the Department of Botany, Rhodes University, Grahamstown, South Africa, 1960. (xxiv + 128 pp., 1 map; mainly an annotated check list of the plants of two divisions of South Africa. Price 10 s.).

Flora Zambesiaca

A. W. Exell & H. Wild: Flora Zambesiaca, Vol. I, pt. 1. Crown Agents for Oversea Governments and Administrations, London, 1960. (336 pp., 1 coloured plate, 58 black and white tabs., history of botanical collecting, glossary, key to families, Gymnosperms, Angiosperms: *Ranunculaceae - Polygalaceae*. Price 25 s.).

Flora of Tropical East Africa

Flora of Tropical East Africa. S. Carter: *Butomaceae* (3 pp., 1 fig.); Alismataceae (16 pp., 7 figs.). London, 1960.

Orchids of Peru

Ch. Schweinfurth: Orchids of Peru. Vol. III. Publ. as Vol. 30, no. 3, of Fieldiana: Botany, Chicago, Ill., 1960. (pp. 533-786, fig. 103-160. Price $ 4.50).

Flora of Paraná

J. Angely: Flora do Paraná. 15. Famílias e Gêneros. Curitiba, Paraná, 1960. (24 pp.; a list of families of vascular plants with indication of number of species).

Catalogue and Statistics of Genera of Phanerogams

J. Angely: Catálogo e Estatística dos Gêneros Botânicos Fanerogâmicos. 45. *Juncaceae*, by M. Barros. Curitiba, Paraná, 1958. (1 p.).

* * *

New Periodicals

Chesapeake science. A regional Journal of research and progress on natural resources. Vol. 1, no. 1 was issued in April, 1960, (Contains articles on the natural resources of the greater Chesepeake region, U.S.A. The journal is distributed free to libraries, etc.; others may subscribe at the rate of $ 2.00 a year).

REGNUM VEGETABILE

New issues

Vol. 18, *Repertorium Plantarum Succulentarum no. IX, 1958*, edited by G. D. Rowley (32 pp., June 1960). Free for all *members* (for 1960) *of I.A.P.T. Others* D.fl. 2.25.

Vol. 19 *World Report on Palaeobotany III.* An international bibliography of palaeobotanical litterature published in 1957-1959, with additional entries for 1950-1956, an Index to all three World Reports (1950-1956), the fourth list of addresses of the palaeo-

botanists of the world, a report on the 1959 assembly of the I.O.P., and the present statutes of this Organization. Edited by EDOUARD BOUREAU, in collaboration with C. A. ARNOLD, I. C. COOKSON, K. R. SURANGE (198 pp., August 1960).

Members of I.O.P. and institutional members of I.A.P.T. (for 1960): free.

Regular personal Members of I.A.P.T. D.fl. 11.40 ($ 3.—, £ 1.1.—).
Others: D.fl. 19.00.

Note: The members of the I.A.P.T.-I.O.P. receive free copies of the World Reports but not of the various editions of Index Herbariorum, part I; regular personal members of I.A.P.T., not belonging to the I.O.P., receive free copies of Index Herbariorum part I, but not of the World Reports.

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The International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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DESIGNATING HYBRID FOREST TREES

Elbert L. Little, Jr. (Washington D. C.)

A uniform policy of designating or naming artificial and natural hybrid forest trees is needed, particularly for the many new kinds originating in tree breeding investigations. For example, how should fifty new interspecific hybrid pines be distinguished? Early agreement among forest geneticists, foresters, and plant taxonomists is desirable to establish uniform usage and avoid unnecessary confusion.

The Committee on Forest Tree Improvement of the Society of American Foresters, Richard T. Bingham, chairman, representing forest geneticists and foresters in the United States, took the following action in 1958: (1) to designate interspecific hybrid forest trees, both artificial and natural, by formulas, not by Latin binomials; (2) to name cultivated varieties (cultivars) of forest trees, including those of hybrid origin, according to the International Code of Nomenclature for Cultivated Plants (1958).

The second point, designating cultivated varieties of forest trees as well as other plants by common names in modern languages under that code, should be universally approved. The first point is controversial, but perhaps early agreement on designating artificial interspecific hybrid forest trees by formulas can be reached by the relatively few active investigators concerned. I wish to review the problem and beg the cooperation of both plant taxonomists and foresters toward a common solution.

Review of problem. How to name interspecific hybrids has been discussed by many investigators, among them, William Trelease (Amer. Phil. Soc. Proc. 16: 44-52, illus. 1917), H. H. Allan (Bot. Rev. 3: 593-615. 1937; 15: 77-105. 1949; Chron. Bot. 5: 205-209. 1939), C. X. Furtado (Chron. Bot. 4: 32-36. 1938; Repert. Sp. Nov. Fedde 44: 244-255. 1938), T. A. Sprague (Chron. Bot. 5: 209-212. 1939), W. H. Camp and C. L. Gilly (Brittonia 4: 325-385. 1943), H. W. Rickett and W. H. Camp (Torrey Bot. Club Bull. 75: 496-501. 1948), and Charles B. Heiser, Jr. (Bot. Rev. 15: 645-687. 1949).

Opinions have differed from suppressing hybrids and recognizing intermediate forms only as species and varieties (H. Uittien, Chron. Bot. 5: 212-214. 1939) to giving Latin binomials to artificial hybrids (Wray M. Bowden, Canad. Jour. Bot. 36: 101-123, illus. 1958). A few have urged restraint and cautious exercise of judgment in naming hybrids.

Alphonse de Candolle in his Lois de la Nomenclature Botanique (1867) designated experimentally demonstrated hybrids with the ending of the specific epithet of the pollen parent changed to *i* or *o* and joined to the second epithet by a hyphen. Hybrids of doubtful origin were to be named as species with the multiplication sign prefixed to the generic name.

From the first edition of the International Rules in 1905, the International Code of Botanical Nomenclature (1956) has provided for designating interspecific hybrids "by a formula and, whenever it seems useful or necessary, by a name." However, names of hybrids have been relegated to Appendix I (Arts. H. 1-5, also Arts. 40, 50), and arrangements to avoid duplication with the International Code of Nomenclature for Cultivated Plants (1958) are pending. The first cited code (Arts H. 1-2, Notes) states also that greater precision may be achieved by the use of formulas.

Most floras and manuals in the United States mention interspecific hybrids briefly or not at all. Hybrids may be indicated by Latin binomial, if any, or by formula or by numerals of parent species. However, in a list, hybrids cited as binomials appear as important as species.

Characteristics of hybrid trees. Hybrid trees have certain obvious differences from most hybrid plants which affect nomenclature. Being large and conspicuous, wild hybrid trees have long attracted the attention of plant taxonomists and have been given Latin binary names perhaps to a greater extent than other hybrids. Even single trees have been named. Because trees are long lived, the putative hybrid tree (or type tree) from which the type was collected can be studied in detail over a period of years, and its progeny from open and controlled pollination can be tested. However, the long period before maturity and seed production makes subsequent progeny tests slow. As generations are long, an isolated intermediate tree probably is a first generation hybrid (F_1). Most hybrids commonly recognized by taxonomists probably are first generation hybrids though intermediate populations, backcrosses, and hybrid swarms also occur.

Natural hybrids of forest trees. Nearly all known interspecific natural hybrid forest trees in the United States now have been given Latin binary names. Camillo Schneider (Arnold Arboretum Jour. 3: 78-84. 1922) listed formulas of more than 50 natural interspecific hybrids and 3 trihybrids among the North American willows (*Salix*), mostly shrubby, and cited also 10 Latin binomials, 4 by himself.

Precedent for uniform Latin binomials for hybrid forest trees in the United States was set by William Trelease (Amer. Phil. Soc. Proc. 16: 44-52, illus. 1917), who listed the North American hybrid oaks (*Quercus*) under 41 binomials. However, nearly all of his 25 new names were *nomina nuda* until validated in 1924. In a thorough review of the hybrid oaks of North America, Ernest J. Palmer (Arnold Arboretum Jour. 29: 1-48. 1948) listed 78 binomials in *Quercus*, naming the few without Latin epithets.

The 1953 Forest Service Check List of Native and Naturalized Trees of the United States by Elbert L. Little, Jr., accepted 101 Latin binomials of interspecific natural hybrids, an increase from 87 in the 1927 Check List and 20 in the 1898 edition, though a few additional hybrids without binary names were omitted. The 1953 Check List (p. 13) stated also: "Use of binomials for hybrids is not to be encouraged ecxept in special studies, such as tree breeding investigations. It is much simpler and clearer to designate supposed hybrids merely by the names of the two parent species joined by the times sign."

Artificial hybrids of forest trees. Most forest geneticists have designated their interspecific artificial tree hybrids by formulas rather than by new Latin binary names. In reviewing forest genetics work in the United States, Ernst J. Schreiner (U. S. Dept. Agr. Yearbook 1937: 1242-1279, illus. 1937) listed formulas and remarked: "Hybrids are not species and naming them as such can only lead to confusion."

L. P. V. Johnson (Canad. Jour. Res. Sect. C, Bot. Sci. 17: 411-444. 1939) compiled by formulas more than 400 natural and artificial hybrids, mostly interspecific, of North American forest tree genera, listing common name, if any, and Latin binomials for more than half.

Complex artificial crosses in *Salix*, mostly designated by formulas, have been reported in Europe. Heribert Nilsson (Hereditas 40: 517-522, illus. 1954) designated by formulas the multispecific hybrids from as many as 8 and 13 species.

In *Populus*, where each hybrid clone corresponds to a single plant propagated vegetatively, the poplar specialists have preferred formulas. A. B. Stout and E. J. Schreiner (N. Y. Bot. Gard. Jour. 24: 216-229, illus. 1933; Torrey Bot. Club Bull. 61: 449-460. 1934) designated by formulas the seedlings from 99 crosses between 34 species, varieties, and hybrids and gave distinctive common names, such as Maine poplar, Geneva poplar, and Rochester poplar, to 10 of their most promising hybrids. However, a few taxonomists have given scientific names to artificial hybrids. For example, the three mentioned were named *Populus* × *mainensis*, *P.* × *genevensis*, and *P.* × *rochesterensis* by H. N. Moldenke (Rev. Sudamer. Bot. 10: 229. 1956). The International Poplar Commission (F. A. O., Rept. 8th Sess. 85 pp., illus. 1956) has adopted the International Code of Nomenclature for Cultivated Plants for naming hybrid poplar clones in modern languages.

Comparison of Latin binomials and formulas. Differences between Latin binomials ("specific" names of Latin form) and formulas for interspecific hybrids are listed in Table 1, from which the advantages and disadvantages of each method may be noted. Formulas are simpler, clearer, more easily learned, and more flexible. Latin binomials are indexed like specific names, better recorded, and more easily found and traced. The formula is easily changed if later workers should employ a different name for one parent because of nomenclatural or taxonomic reasons. Being permanently fixed to a type specimen, the Latin binomial is stable. However, if progeny tests from the type tree reveal one parent had been incorrectly identified, then other specimens may be shifted to a different binomial. For example, H. H. Bartlett (Rhodora 53: 249-264, illus. 1951) submitted evidence from open pollinated progeny of the type tree that *Quercus* × *deamii* represents the cross *Q. macrocarpa* × *muehlenbergii*, rather than *Q. alba* × *muehlenbergii*, as originally believed.

There is no rule for deciding when a Latin binomial is "useful or necessary". Any taxonomist could name an interspecific hybrid made by a geneticist by publishing a Latin diagnosis and indicating a type specimen. An extremist could make crosses merely to create new binomials.

One of the most serious objections to Latin binomials for interspecific artificial tree hybrids is the enormous number of possible new names. The number of hybrid binomials in a genus could exceed greatly the number of species, thus complicating binomial nomenclature. Pages of future Supplementa of Index Kewensis could be filled with lists of hybrids.

If all species of a genus were interfertile, the maximum number of possible interspecific hybrids after reduction of half for reciprocal crosses would be almost one-half the square of the number of species or $\frac{1}{2}$ n (n — 1). For example, 3 interspecific hybrids are possible in a genus of 3 interfertile species, 10 in a genus of 5 species, 45 in a genus of 10 species, and 190 in a genus of 20 interfertile species!

If used alone without formulas, how many binomials would be recognized? Would the different parentages be remembered without the formulas?

Somewhere the Latin binomials would have to stop and give way to formulas or variety (cultivar) names in modern languages for complex hybrids. If applied to

Table 1. Comparison of Latin binomials ("specific" names of Latin form) and formulas for interspecific hybrids of forest trees.

Subject compared	Latin binomials	Formulas
International Code of Botanical Nomenclature	"Specific" names of Latin form authorized "whenever it seems useful or necessary" and subject to same rules as names of species (Arts. 40, H. 1).	Formulas authorized (Art. H. 1) but are not names and not subject to rules. When polymorphic species are involved and if infraspecific taxa are recognized, greater precision may be achieved by formulas (Art. H. 1, Note 1).
International Code of Nomenclature for Cultivated Plants	Names of Latin form authorized but subject of International Code of Botanical Nomenclature (Art. 41).	Formulas authorized (Arts. 38, 39). Collective names in modern languages authorized also (Arts. 40, 42, 43).
Relation to specific names	Distinguished from specific names only by multiplication sign (×).	Composed of two specific names or epithets connected by multiplication sign (×).
Publication, citation, date	Have valid publication with citation and date.	Have no formal publication with citation or date.
Priority	Priority established by date.	Priority not established or needed.
Name	Latin binomial consists of two words, generic name and "specific" epithet with multiplication sign (×) before the latter. Epithet is an additional Latin word similar to specific epithet but distinguished only by multiplication sign (×). May be descriptive or dedicated to a person associated with hybrid.	Formula consists of specific names or epithets of the two parents connected by multiplication sign (×) and following the generic name. No additional Latin word like specific epithet. Descriptive in that the hybrid usually is intermediate between the named parents. Formulas cannot be dedicated to persons.
Description	Latin diagnosis required. Description may be difficult because of variability.	No description required.
Author	Author is stated and may be credited as discoverer or originator.	No author; discoverer or originator may not be known and is not credited.
Specimens	Type specimen required. Herbarium specimens may be filed under binomial.	Type specimen not required. Herbarium specimens are filed after a parent species.
Availability	New names of Latin form cannot be used until formally published.	New formulas are always available for immediate use when needed.
Change of status	When binomial is changed from species to hybrid or vice versa, the original status should be indicated in parenthesis (Art. 50). Multiplication sign is inserted (or deleted).	Formula replaces Latin binomial when status is changed from species to hybrid, and vice versa.

Subject compared	Latin binomials	Formulas
Parentage	Parentage not indicated. Latin binomial must not consist of specific epithets of parents unaltered or with ending of only one epithet changed (Art. H. 1, Note 2). However, parentage could be indicated by a contraction from the two epithets.	Specific epithets of parents in alphabetical order (or indicated by male and female signs) are connected by multiplication sign (×).
Reciprocal crosses	Reciprocal crosses not designated.	Reciprocal crosses may be designated by male and female signs or by female parent first.
Varieties of parent species	Varieties of polymorphic parental species not distinguished.	Varieties of parent species may be added to formulas for greater precision.
Progeny	All offspring from same parent species receive same binary name (Art. H. 1). Latin binomials include all generations and back crosses distinguishable from parents and may lack precision. Different hybrid forms of the same parentage, called nothomorphs, when desirable may be designated by a Latin epithet (Art. H. 5).	Expanded formulas can distinguish precisely generations and backcrosses. Different cultivated hybrids can be named as varieties (cultivars) in modern languages under International Code of Nomenclature for Cultivated Plants.
Number of new names	The number of hybrid binomials in a genus could exceed greatly the number of species. Naming of a large number of interspecific hybrids could complicate binomial nomenclature.	No new names.
Stability	Latin binomials are permanently associated with type specimen and are not affected by change in name of parent species, even if epithet is derived from that of parent species.	Formulas are as stable as specific names and are easily changed if name of one parent species is changed.
Misidentification	If parentage is uncertain, Latin binomial may be more definite than a formula. If one parent of type specimen (or type tree) was misidentified, some other hybrid specimens and trees to which the name had been applied may require a different Latin binomial.	Formulas are not affected by type specimens. If one parent was misidentified, formula is easily changed.
Synonymy	Latin binomials sometimes become synonyms, such as when the type is reduced to synonymy of a species or another hybrid.	Formulas follow synonymy of parent species and are easily suppressed without synonymy.
Indexing	Latin binomials are indexed and catalogued and are easily located. Publications are indexed, often by scientific names, and abstracted.	Formulas are not indexed or cataloged and are not easily located. Publications are indexed, often by scientific names, and abstracted.

trispecific, multispecific, bigeneric, and multigeneric hybrids, binomials could become exceedingly numerous. Should the artificial hybrids in *Salix* involving 8 or 13 parental species be named too?

Parentage of backcrosses and complex hybrids can be shown by formulas but is lost in binomials. Hui-Lin Li (Taxon 6: 216-218. 1957), James W. Hardin (Taxon 7: 52-53. 1958) and others have suggested the symbols $>$ (greater than) and $<$ (less than) in formulas to designate backcrosses and members of hybrid swarms. These symbols placed next to the multiplication sign were accepted in examples cited in earlier editions of the International Rules (ed. 2. 1912; ed. 3. 1935; Art. 34). Li commented further: "A Latin specific epithet for F_1 hybrids seem superfluous as it greatly complicates the already extremely burdensome botanical nomenclature."

The variability in some hybrid populations may be a serious objection to naming and description, as Trelease (1917) observed. British botanists (Internat. Bot. Congr. Fifth, Cambridge, Nomenclature proposals by British botanists. 203 pp. 1929; p. 13) proposed that groups of hybrid origin should not be named unless possessing relatively constant morphological characters. However, this proposal was not adopted, being applicable also to other taxonomic groups and outside the scope of nomenclature.

"Telescoped formulas" contracted from both parental epithets combine certain advantages of the two methods. For example, the hybrid between *Pinus attenuata* and *P. radiata* has been named *Pinus* × *attenuradiata*. However, this epithet might be regarded as a formula under the Code (Art. H 1, Note 2), because the ending of only one epithet was changed. A shorter contraction would remove this objection. It has been suggested that such contracted epithets be restricted to hybrids of known parentage produced experimentally. Bigeneric hybrids may be designated also by a generic name like a condensed formula followed by a variety (cultivar) name.

Possible solutions. One compromise, similar to past usage, would be for taxonomists to give Latin binomials to natural hybrids and for forest geneticists to use formulas for artificial hybrids. Natural hybrids would be named, but artificial hybrids not.

However, in groups such as forest trees, both natural and artificial hybrids probably should be treated alike, as the two groups overlap and are not readily separated. Many natural hybrids have been duplicated artificially, while some artificial hybrids have been discovered also in the wild state. Interspecific hybrids have been named from trees appearing spontaneously in botanical gardens and arboreta from parent trees whose natural ranges do not meet.

Publication of Latin binomials for interspecific hybrids could not be prevented without amendment of the Code, but adoption of these names is not required. Both natural and artificial hybrids could be named, and each worker could choose between names and formulas. If it should be advantageous to give Latin names to artificial hybrids, then the first geneticists making the controlled crosses perhaps should accept the job independently or assisted by taxonomists.

The simplest solution, that adopted by forest geneticists and foresters in the United States and recommended here, is to designate interspecific hybrid forest trees, both artificial and natural, by formulas, not by Latin binomials. It is hoped that plant taxonomists will refrain from giving new Latin binary names to the new artificial hybrid trees produced by the geneticists.

International Code for Nomenclature of Cultivated Plants. Naming the cultivated interspecific hybrids of forest trees, as well as other plants, in modern languages is provided by the International Code for Nomenclature of Cultivated Plants (Arts. 40, 42). In the example cited above, the interspecific hybrids between *Pinus attenuata* and

P. radiata might be given the collective name Attenuradiata pine, Attenuradiata Hybrid pine, or *Pinus* Attenuradiata Hybrid instead of the binomial *Pinus* × *attenuradiata.*

Some interspecific hybrids have been given Latin names honoring persons. Similar names in modern languages without the Latin endings are more appropriate, for example, Sonderegger pine rather than *Pinus* × *sondereggeri.*

Any tree hybrids produced in quantities or commercially should be named further as varieties (cultivars) for greater precision, for example, hybrid clones in *Populus* and varieties of hybrids in *Pinus.* Under the Code (Art. 45), when a variety (cultivar) of an interspecific hybrid is introduced into cultivation, it must be given a variety (cultivar) name in addition to the collective name or formula, even if only one variety is concerned. Otherwise, the first variety would be nameless and not readily distinguishable when a second variety (different and possibly inferior) from the same two parental species is produced and named elsewhere later.

ARTICLE 59

F. C. Deighton (Kew)

The wording of the present Art. 59 (Code, 1956) was drawn up at the Seventh International Botanical Congress, Stockholm, 1950, as a result of a proposal by Drs. G. R. Bisby and J. A. Stevenson. References to previous discussions on the subject are given by Rogers in Mycologia 40: 241-254. 1948. A number of recent publications have, however, shown that there is more than one possible interpretation of the provisions of the Article.

Most difficulty has arisen in interpreting the following sentences from Art. 59: "The type specimen of a name applied to a particular state must show the characteristics of that state."

"The author who first describes a perfect state may adopt the specific epithet of the corresponding imperfect state, but his binomial for the perfect state is to be attributed to him alone, and is not to be regarded as a transfer [i.e., new combination]."

Yet these two sentences were undoubtedly intended, when the Article was first drafted, to be of fundamental importance in clearing up earlier confusion.

Dr. M. A. Donk (Taxon 9: 171-174. 1960) has discussed certain aspects of the Article. He stresses the Rule that a name which is validly published makes a later homonym illegitimate [it must be noted that this still applies even if the earlier homonym is illegitimate: Art. 64 (2)]; and there is no precise provision in Art. 59 to amend this rule. In this connexion he discusses *Corticium microsclerotia* (Matz) Weber.

He also cites Bisby's remarks (An introduction to the taxonomy and nomenclature of fungi, I.M.I., Kew, ed. 1: 88. 1945) about *Mycosphaerella aleuritidis* (Miyake) Ou. These early remarks by Bisby were, however, made before the present Art. 59 was framed, and Bisby later (An introduction to the taxonomy and nomenclature of fungi, C.M.I., Kew, ed. 2: 117. 1953) remarked "Article 69 [= Art. 59 of Code, 1956] now eliminates most of the uncertainties which existed in its former wording as Art. 57. ... A perfect state described as "*Mycosphaerella aleuritidis* (Miyake) Ou n. comb., syn. *Cercospora aleuritidis* Miyake" is now to be cited as a new species "*M. aleuritidis* Ou (as "(Miyake) Ou")." Bisby presumably interpreted the last sentence of para. 1 of Art. 59 (the second of the two sentences which I have quoted

above) as constituting, in effect, an amendment to Art. 64(2). Donk has shown that the wording of Art. 59 does not exactly sanction this interpretation, though I believe this was what was intended when the Article was framed.

We must always remember that the Articles of the Code are not meant to result in legal quibbles. Nobody should find himself in the position of having to remark "the current interpretation of the International Rules appears to be", as does Savile (Canad. J. Bot. 33: 490. 1955). That such a remark should be found necessary points to the need for rewording of Art. 59, and I have therefore tried to draft, for consideration, a rewording that reflects what I believe the majority of taxonomic mycologists want it to mean, and what I believe its original sponsors intended. I have also tried to ensure that as few changes as possible in names of fungi will be needed. These are two of the objects indicated by the Preamble to the 1956 Code. It may be thought unfortunate that the wording of Art. 3 of the 1952 Code has now been omitted: this stated "The Code of nomenclature should be simple and founded on considerations sufficiently clear and forcible for everyone to comprehend and be disposed to accept".

A series of examples will be cited, with comments, in an endeavour to discover what has become established custom in the interpretation of Art. 59. Since this Article has perhaps its most important and difficult application in the Uredinales, most examples will be drawn from this group of fungi, but it is advisable first to consider some more simple examples, of the kind discussed by Donk.

Example 1

Mycosphaerella caryigena (Ell. & Ev.) Demaree & Cole in J. agric. Res., **44**: 145. 1932, was published with an English diagnosis for the *Mycosphaerella* state drawn up from material collected in (?) southern Georgia, U.S.A. (type not designated), not from the type of *Cylindrosporium caryigenum* Ell. & Ev. on which the "new combination" was based.

Example 2

Mycosphaerella cruenta (Sacc.) Latham in Mycologia **26**: 525(1934), was published with diagnosis in English and Latin for the *Mycosphaerella* state drawn up from material collected in N. Carolina, U.S.A. (type not designated), not from the type of *Cercospora cruenta* Sacc. on which the "new combination" was based.

Example 3

Elsinoë ampelina Shear in Phytopathology **19**: 677. 1929. Shear gave a description in English of the asci and ascospores of the fungus which he obtained on overwintered cankers caused by *Sphaceloma ampelina* De Bary. In one and the same paragraph on p. 677 he says "we would therefore refer the ascogenous form of the grape anthracnose organism to the genus Elsinoë as *E. ampelina* n. sp." ... "and it is possible as Jenkins and Horsfall suggest that *E. viticola* Rac. is a synonym of *E. ampelina* (de By.) Shear, n. comb.". The name is cited in later literature sometimes as *Elsinoë ampelina* Shear and sometimes as *E. ampelina* (De Bary) Shear.

Comments. Examples 1 and 2 are similar to *Mycosphaerella aleuritidis* (Miyake) Ou which was cited by Bisby (Mycologia 36: 282. 1944) and referred to in para. 4 above. Bisby was quite sure about the intentions of the present Art. 59 in regard to such an example, though it is also clear that he did not advocate the publication of a name for the perfect state of a fungus in this way. It follows that Bisby would have regarded examples 1 and 2 as being the valid publication of legitimate names "*Mycosphaerella caryigena* Demaree & Cole, sp. n. (as '(Ell. & Ev.)')" and "*Mycosphaerella cruenta* Latham, sp. n. (as '(Sacc.) Latham')", based on types from

southern Georgia and from N. Carolina respectively. It is of interest to note that Petrak (Just's bot. Jber. 63 (*1935*), Abt. 2: 941. 1944) listed these names as "*Mycosphaerella caryigena* Demaree & Cole. — Stat. conid. *Cercosporella caryigena* (Ell. & Ev.) v. Höhn." and "*M. cruenta* Latham. — Stat. ascif. *Cercosporae cruentae* Sacc."

Example 3 is not an example of alternative names (Art. 33), since the name *Elsinoë ampelina* was published by Shear both as a new species (based on Shear's type) and as a new combination (based on De Bary's type). If we follow Bisby's interpretation, the validly published and legitimate name was *E. ampelina* Shear sp. n. (Note that should it be considered that Raciborski's earlier-named species is identical with Shear's, the correct name of the fungus will be *E. viticola* Rac.).

There are, I believe, only a few similar examples, the latest to my knowledge being *Leptosphaeria taiwanensis* Yen & Chi (as '(Mats. & Yam.) Yen & Chi') in J. Sugar Cane Res., 4: 213. 1950. A good reason for accepting these names as the validly published and legitimate names of new species, based on the type containing the perfect state, is that the perfect state of many such fungi is rarely seen. If we are to follow Donk's argument, *Mycosphaerella caryigena* (Ell. & Ev.) Demaree & Cole must be based on the type of the basionym (*Cylindrosporium caryigena* Ell. & Ev.) and a new name will have to be published for the *Mycosphaerella* state based on material seen by Demaree & Cole (or, if this is no longer available, on a new type) and accompanied by a Latin diagnosis. This, however, would probably not prove to be an insuperable difficulty.

I am personally not averse (as is Dr. Donk) to the use of the same epithet for both the perfect and the imperfect states of the same fungus. In large genera such as *Mycosphaerella* and *Cercospora*, in which there is bound to be some duplication of specific epithets, I find it easier to remember (for example) that *Mycosphaerella arachidicola* W. A. Jenkins is the perfect state of *Cercospora arachidicola* Hori, than that *Mycosphaerella personata* Higgins is the perfect state of *Cercospora vitis* (Lév.) Sacc. while the perfect state of *Cercospora personata* (Berk. & Curt.) Ell. & Ev. is *Mycosphaerella berkeleyi* W. A. Jenkins. The practice of using the epithet of the name of the imperfect state in the name of the perfect state is at least 60 years old.

APPLICATION OF ART. 59 TO UREDINALES

Whereas, in Ascomycetes, the imperfect state has been assigned to a genus of the Fungi Imperfecti, in the Uredinales the imperfect states are recognised as still belonging to the Uredinales. In fact, the uredia of *Hemileia* (to give an example) are as easily recognisable as belonging to that genus as are the telia; and because of this, a number of new taxa have been described in *Hemileia* though based on types bearing uredia only. But I believe nobody has described a species of *Mycosphaerella* based on a type without perithecia and showing only an imperfect state.

So far as I am aware, recombinations from a "perfect" to an "imperfect" genus (in modern concept) have only been made in the Uredinales: e.g., Arthur's transfers from *Melampsora* into *Uredo* (which he at that time regarded as a "perfect" genus), in Result. Sci. Congr. int. Bot. Vienne, 1905: 338. 1906. I see no reason why these should not be regarded as validly published and legitimate; and though nobody now uses these combinations, the binomials must have priority over later homonyms in the genus *Uredo*.

Most of the following examples are taken from recent papers by Professor G. B. Cummins, though similar examples in Uredinales can be found in recent works by other authors. Cummins (Mycologia 48: 601. 1956) explains clearly his interpretation of Art. 59 by these remarks:

"The following nomenclatural changes are necessary to bring the names of certain species of North American rust fungi into accordance with the International Code. Most of the changes involve either: 1, the provision of Latin descriptions for telial stages which were previously, but subsequent to January 1, 1935, published in English where a specific epithet based on an imperfect stage was treated as a transfer (technically *nomina nuda*) or 2, names used under a perfect genus but based on the aecial or uredial stage (anticipatory names). In the first case Latin descriptions are necessary to validate the names and in the second case transfers of the specific epithet to the appropriate form genus is required."

Example 4

Achrotelium lucumae Cummins, sp. nov. in Mycologia **48**: 601. 1956 [Latin description of telia: type from Florida, collected in 1939].

Syn.: *Uredo lucumae* Arth. & J. R. Johnston in Mem. Torrey bot. Cl. **17**: 169. 1918: *Uraecium lucumae* (Arth. & J. R. Johnston) Arth. in Bull. Torrey bot. Cl. **60**: 467. 1933; *Achrotelium lucumae* (Arth. & J. R. Johnston), Cumm. in Bull. Torrey bot. Cl. **67**: 70. 1940, *nom. nud.* [i.e. telia described, but not in Latin].

Comments. Numerous other examples could be cited, from all of which it is clear that it is the wish of several taxonomists that the third sentence of Art. 59 (the first of the two sentences I have quoted in para. 2 above) shall imply that when a specific epithet based on an imperfect state is transferred to a "perfect" genus without the provision of a description (in Latin, on or after 1 Jan. 1935) of the perfect state, such "new combination" shall be treated as not validly published and thus shall have no status under the Code. Presumably the full formal citation of the correct name could be *Achrotelium lucumae* Cummins ex Cummins (1956) which would normally be cited as *A. lucumae* Cummins (Rec. 46A). It will be seen that the type of *Achrotelium lucumae* Cummins, 1956, is not the type of *Uredo lucumae* Arth. & J. R. Johnston, 1918.

This is essentially similar to the example of *Corticium microsclerotia* (Matz) Weber discussed by Donk (Taxon 9: 172-3. 1960). In some respects it is similar to nos. 1, 2 and 3, above.

Example 5

Uredo cubensis (Arth. & J. R. Johnston) Cummins in Mycologia **48**: 607. 1956.

Syn.: *Ravenelia cubensis* Arth. & J. R. Johnston in Mem. Torrey bot. Cl. **17**: 118. 1918, based on uredia.

Comments. Numerous similar examples could be cited from recent publications. The name *Ravenelia cubensis*, though validly published, is regarded as illegitimate because it was published in contravention of the third sentence of Art. 59 and must therefore be rejected. (If this is the general wish, another paragraph ought to be added to Art. 64, to read "when it is published in contravention of Art. 59".) How can it therefore be held that the name *Uredo cubensis* is legitimate, since it is based on the illegitimate name *Ravenelia cubensis?* The note to Art. 72 seems pertinent: "when a new epithet is required, an author may, if he wishes, adopt an epithet previously given to the taxon in an illegitimate name, if there is no obstacle to its employment in the new position or sense; the epithet in the resultant combination is treated as new". The example to Art. 72, Note, is similar to example 5 and I suggest that it can properly be held that the new name should be written *Uredo cubensis* Cummins, not *U. cubensis* (Arth. & J. R. Johnston) Cummins, and the epithet *cubensis* in this combination must be treated as new, dating from 1956. The type remains the same for both the new and the old (illegitimate) name.

Example 6

"*Coleosporium eupatorii* Arth. sp. nov." [ex Cummins] in Mycologia **48**: 603. 1956 [cited as "Arth. ex Cumm." by Cummins & Stevenson in Plant Dis. Reptr, Suppl. 240: 119. 1956].

Syn.: *Coleosporium eupatorii* Arthur in Bull. Torrey bot. Cl. **33**: 31. 1906, based on uredia.

Cummins supplies a Latin description of the telia and designates Cheo 1240, collected in 1932 as type. He mentions that Tai (Farlowia **3**: 101. 1947) first described the telia [under the name '*Coleosporium eupatorii* Arth.'] but not in Latin.

Example 7

"*Hemileia mussaendae* Viennot-Bourgin sp. nov." [ex Cummins] in Bull. Torrey bot. Cl. **87**: 36. 1960. "Status uredosporiferus. *Hemileia mussaendae* Viennot-Bourgin". [Latin description of telia and teliospores.] "Type: on *Mussaenda* sp., Wenchi, Ashanti, Ghana, Nov. 25, 1955, C. Piening, C.B. 2129 (IMI., PUR)."

Cummins remarks: "Since Viennot-Bourgin's fungus" [Bull. Soc. mycol. Fr. **67**: 431. 1952] "on *Mussaenda erythrophylla* Schum. & Thonn. from Ivory Coast had no teliospores the name, *Hemileia mussaendae,* dates from the present publication and Piening's specimen is the type". Presumably Cummins would cite the author as "Viennot-Bourgin ex Cummins".

Example 8

Uredo ricini Biv.-Bern., 1815, was described on *Ricinus*. The name was changed to *Caeoma ricini* by Schlechtendahl, 1826, to *Melampsora ricini* by Passerini (Erb. Critt. Ital., Ser. II, fasc. XIV, no. 684. 1878) and to *Melampsorella ricini* by De Toni (Saccardo, Sylloge Fung. **7**: 596. 1888). Though only uredia were known till 1952, the names *Melampsora ricini* and *Melampsorella ricini* have been widely used for the rust on *Ricinus* in spite of the fact that *Uredo ricini* Biv.-Bern., was presumably the correct name according to Art. 59 as interpreted by Cummins and others.

Noronha (Agric. lusit. **14**: 229, 242. 1952) described, with a Latin diagnosis and under the name *Melampsora ricini* Passerini, telia on *Euphorbia marginata* artificially inoculated with urediospores obtained from *Ricinus communis* in Portugal.

The late Dr. G. R. Bisby, as is evident from his notes in Herb. I.M.I., thought it correct to cite the name of this taxon as *Melampsora ricini* Passerini ex Noronha (1952), and presumably he would have regarded the telial material on *Euphorbia marginata* from Portugal as the type, and not the uredial material on *Ricinus* with which Passerini's name is associated.

Comments. In examples 6 and 7, it will be noted that there is a wish to retain an established (and validly published) name for a taxon by the use of 'ex' between the name of the original and the later author. But this particular use of 'ex' is not provided for in the Code: Rec. 46A only applies "when a name has been proposed but not validly published by one author and is subsequently validly published and ascribed to him by another author". Yet if *Ravenelia cubensis* Arth. & J. R. Johnston (example 5) is held to be validly published, though illegitimate, it is illogical to maintain that *Coleosporium eupatorii* Arthur (example 6), and *Hemileia mussaendae* Viennot-Bourgin (example 7), likewise based on uredia and hence regarded as illegitimate, are not validly published; and I do not see how the Code could be amended so as to distinguish between the validity of publication of these names.

But examples 6 and 7 are not quite the same as example 5 because the telial type is not the same as the uredial type on which the illegitimate name was based: and Art. 72 is only applicable when the type of the new name is the same as that of the old and illegitimate name (as in example 5). The names *Coleosporium eupatorii* Arth. and *Hemileia mussaendae* Vienn.-Bourg., which (like *Ravenelia cubensis* Arth. & J. R. Johnston, example 5) we are considering for this argument to be validly published but illegitimate, are undoubtedly permanently attached (Art. 7) to Arthur's and Viennot-Bourgin's types, respectively, and to no others.

I can see no reasonable alternative to the necessity for the publication of new names to be associated with the telial types in examples 6 and 7, since Art. 64(2)

makes it quite clear that the names published by Cummins are later homonyms and must be rejected: the same argument applies to the more extreme example 8. The alternative of amending Art. 64(2) by the addition of the words "except when the earlier homonym is illegitimate because it was published in contravention of Art. 59" is, I think, unlikely to be generally acceptable.

To date, there are relatively few examples similar to 6 and 7, but more and more are likely to arise as telial material is discovered. It is therefore urgently necessary that agreement should be reached about the wording of the Code so that there shall be no doubt about legitimacy and validity of publication of such names, their correct citations and their types.

APPLICATION OF ART. 59 TO TYPES IN UREDINALES

Several Uredinologists have given their views on the interpretation of paragraph 3 of Art. 59, in regard to its application to types.

Bisby (An introduction to the taxonomy and nomenclature of fungi, C.M.I., Kew, Ed. 2: 117. 1953) says "the common practice of transferring *Uredo* names" [to genera based on perfect states] "is now legitimate only when the description or the type specimen of the *Uredo* shows that teliospores were present."

Savile (Canad. J. Bot. 33: 490. 1955) says "The current interpretation of Art. 69 of the International Rules" [Code, 1952: = Art. 59, Code, 1956] "appears to be that if a specimen described as a *Uredo* also bears telia, unnoticed or unmentioned by the author, this specimen must be regarded as the type when the fungus is assigned to its appropriate genus; and the reassigning author must be regarded as making a new combination. If telia are lacking in the original specimen, the reassigning author is interpreted as making a new species based on his telial specimen." (Note, incidentally, that Savile would presumably regard examples 6, 7 and 8 as the publication of the names of new species based on the telial specimens, but does not explain how the question of homonyms is to be overcome.)

Jørstad (Blumea 9: 1. 1958) follows Savile, saying "owing to the type method now being established (Code, Art. 18 [1952: = Art. 7. 1956]) it seems natural to consider a *Uredo* name valid if the type contains teleuto, even if this stage has not been mentioned in the author's description of the species in question." This view was held by Rogers (Mycologia 40: 250-251. 1948), and Cummins is evidently of the same opinion. But this argument, if based on sentence 3 of Art. 59, seems to me to be somewhat of a *non sequitur*. It is to be noted that Hylander, Jørstad and Nannfeldt (Opera bot. 1, 1: 4. 1953) said "the rust names considered as correct are those founded on *descriptions* of the teleuto state" [my italics]: Jørstad and Nannfeldt evidently modified their views later (Bot. Notiser 3, 1: 306. 1958).

It is essential that Art. 59 shall be worded so that there can be no two opinions about its meaning in this respect.

Example 9

Puccinia jalapensis (Holw.) Barth. in N. Am. Ured. no. 2549. 1922 [Latin description of teliospores by Cummins in Mycologia **48**: 605 (1956); cited as '(Holw.) Barth. ex Cumm.' by Cummins and Stevenson in Plant Dis. Reptr, Suppl. 240: 153. 1956].

Syn.: *Aecidium jalapense* Holw. in Ann. mycol., Berl. **2**: 392. 1904, with undescribed telia; *Dicaeoma jalapense* (Holw.) Arth. in N. Am. Flora **7**: 420. 1920.

Cummins remarks: "Both N. Am. Ured. Nos. 1501 and 2549 are from Holway's original collection No. 3076 on *Ipomoea jalapa* (L.) Pursh, Jalapa, Mexico, Oct. 5, 1898. A few teliospores are present, hence Holway's *Aecidium jalapense* is based on a type bearing the perfect state although not described. A description of the teliospores is given above."

Comment. It is accepted that Holway did not see the teliospores, and though these were present on part of the type collection, they may not have been present (or were, at least, not recognised) on the part which Holway examined.

One of the problems in connexion with micro-fungi lies in the fact that a "type" is a collection usually consisting of more than one individual plant of the same species (and frequently of other species as well). In this sense, it is a mixture from which a later worker must choose a "lectotype" as nearly as possible conforming with the original diagnosis, since the actual plant individual which was examined by the original author was very likely removed by him and not preserved (or if it is still present it will be in most cases virtually impossible to locate again). What Holway saw in his type were aecia, and his name, *Aecidium jalapense*, must be permanently attached to the aecia on the type collection.

The first person to discover teliospores (though he did not see telia) on this material was Cummins, who described them in Latin and cited the same collection as the type. But it is surely incorrect to say that the basionym is *Aecidium jalapense* Holway, though the teliospores are presumably a state of the same fungus species.

The first publication of a name for this taxon in *Puccinia* was by Bartholomew. Cummins regards Bartholomew's binomial (and likewise Arthur's, in *Dicaeoma*) as not validly published. I have discussed this point under my comments to example 4 and it may well be desirable to make clear provision in the Code so that Bartholomew's combination into *Puccinia* may be rejected in such a way as to give it no status under the Code. But the portion of the specimen (a collection of plant individuals, though doubtless belonging to the same species) on which Cummins has found teliospores is not the portion associated permanently with the name *Aecidium jalapense* Holway, and (if Bartholomew's binomial can be rejected as invalidly published) the name *Puccinia jalapensis* should in my opinion be attributed to Cummins (1956) and to him alone, since the epithet '*jalapensis*' would no longer be preoccupied in *Puccinia*.

Example 10

Jørstad (Blumea **9**: 1-29. 1958) examined Persoon's collection of rusts now preserved at Leiden, and listed those on which telia are present. In reference to the present discussion, the following categories are pertinent:

(1) Rust taxa of which only telia are known. In this case, Persoon must have described telia. Example: *Uredo scutellata* Pers.

(2) Rust taxa by the description of which Persoon clearly indicated that he had seen telia. Example: *Uredo appendiculata* Pers. and *U. tussilaginis* Pers.

(3) Rust taxa represented by specimens in Persoon's collection showing both uredia and telia, but the telia of which were undoubtedly not described by Persoon. Examples: *Uredo betae* Pers. and *U. viciae-fabae* Pers.

Comments. Category (3) is the point of interest in this discussion. Jørstad says, of *U. betae*, that one of the two collections consists of "a beet leaf with plenty of uredosori, and a few teleutosori not easily seen", while the other is "a beet leaf with uredosori only". If he had seen teliospores, Persoon would surely have seen and described the short persistent pedicels which are as evident in *Uromyces betae* as in *U. appendiculatus*. Still more obvious are the longer persistent pedicels of the teliospores of *U. viciaefabae* (*U. fabae*), which Persoon does not mention, though Jørstad says that telia are present on the collection which he takes as lectotype.

There is also the vexed question of *Milesia* White and *Milesina* Magnus, and it is time that it is decided once and for all which name is to be accepted for the telial state. Cummins & Stevenson (Plant Dis. Reptr, Suppl. 240: 130. 1956) say 'In con-

sidering the problem of *Milesina* it has been decided that the former more nearly conforms to the spirit of the present Code.' Jørstad & Nannfeldt (Bot. Notiser 3, 1: 306. 1958) say "It has been thought necessary to use *Milesia* instead of *Milesina*"; thus reversing their views in Opera bot. 1, 1. 1953. On the other hand, Hiratsuka (Revision of Taxonomy of the Pucciniastreae, Tokyo, 1958) used *Milesina* instead of *Milesia* for the genus characterised by telia, and transfers to *Uredo* all species names validly published in *Milesia* and *Milesina* which are based on uredia only: i.e., he regards *Milesia* as a synonym of *Uredo*. Mayor (Mém. Soc. neuchâtel. Sci. nat. 9, 1. 1958) also uses *Milesina*.

The basis of the decision to use *Milesia* instead of *Milesina* is Faull in Contr. Arnold Arbor. 2, 1932, where he states that the type of *Milesia polypodii* White (the type of *Milesia* White) contains teliospores which were unnoticed and unmentioned by White, and (p. 10) remarks "To particularize, I have found few species of *Milesia*, out of the twenty-two species and varieties whose teliospores are known, in which the teliospore characters are of the slightest taxonomic service in the recognition of species. The uredospores of *Milesia*, on the other hand, exhibit unusual, distinctive, morphological versatility, so much that species can ordinarily be recognized from them alone without reference to other organs or structures."

Faull continued (p. 10) "That the framers of the accepted rules anticipated situations such as are presented by *Milesia*, that they recognized the spirit of the principles underlying the Rules as something not requiring illogical adherence to defective formulae under all circumstances, and that they favored or anticipated adaptations of the Rules if such arose, are more than presumptive opinions."

"Therefore", Faull said (p. 11), "I have accepted *Milesia* White as the proper name for the genus .... In my judgement sufficient latitude is permitted by the Rules to sanction these usages, but if not, I anticipate that either the Rules will be amended so as to extend recognition to uredinial characters as a criterion of priority, or at the very least that *Milesia* White will be listed among the *nomina conservanda*.

The case of *Milesia* and *Milesina* is complicated by the fact that the teliospores are formed within the epidermal cells of the host plant and were not noticed by White who was preoccupied with the conspicuous uredia. In a similar way, Berkeley in 1837 described *Cylindrosporium ficariae* Berk., which is now known to be conidial *Entyloma ficariae* Fisch. v. Waldh., 1877, but failed to notice that chlamydospores were present in his type material though Berkeley & Broome in 1875 reported their presence (see Ainsworth & Sampson, The British Smut Fungi, C.M.I., Kew: 106, 1950, and Lindeberg in Symb. bot. upsaliens. 16(2): 41. 1959).

In a somewhat different category comes *Chrysomyxa*. Savile (Canad. J. Bot. 33: 490. 1955), in reference to *C. ledi* var. *cassandrae* (Peck & Clint.) Savile, says "the specimen from Center bears both stages" [i.e., telia and uredia] "in abundance and is the first one cited by Peck. It is accordingly hereby designated as the lectotype of *U*[*redo*] *cassandrae* .... It may be noted that under a hand lens or the lowest power of a dissecting microscope the germinating telia look much like uredinia. Under magnification sufficient to show the urediniospores clearly they are readily distinguished."

Savile's observations seem to me to point to a logical solution of this difficulty. As Nannfeldt remarks (Symb. bot. upsaliens. 16(2): 152. 1959), "The acceptance of the type method certainly does not mean that the descriptions should be totally neglected!" I suggest that if the possibility cannot be excluded that the original author of the name of a taxon in Uredinales did actually see and attempt to describe the telia, his type must be accepted as the type of the telial state. This is the case with *Uredo cassandrae* Peck & Clint., and with *Uredo scutellata* Pers., *U. appendiculata* Pers. and *U. tussilaginis* Pers. But. in the case of *Uredo viciae-fabae* Pers., *U. betae*

Pers., *Aecidium jalapense* Holw. and *Milesia* White, the original authors of these names definitely did not see telia.

I can myself see no good reason for conserving the name *Milesia* against *Milesina*. I think there are names available in both genera for all species so far described. In this connexion, Arts. 7 and 62 are pertinent.

CONCLUSIONS

In framing a rewording of Art. 59, we must bear in mind the following:

(1) The Code deals with nomenclature and not with taxonomy.

(2) A nomenclatural type is not necessarily the most typical or representative element of a taxon: it is merely that element with which the name is permanently associated (Art. 7, Note 1).

(3) In fungi, other than Uredinales, the imperfect state is assigned to a genus of the Fungi Imperfecti (Deuteromycetes); whereas, in the Uredinales, the imperfect states are still regarded as belonging to the Uredinales. Nevertheless, in order to provide one code of nomenclature for all fungi, names of genera of Uredinales which are typified by a state which consists of spores which do not give rise to basidia are treated as names of imperfect states and are governed by the same rules of nomenclature as apply to Fungi Imperfecti.

(4) It is a paradox that in fungi (perhaps one should say other than Uredinales) we recognise that a taxon (which we say has one correct name which is the earliest legitimate name typified by its perfect state) may be made up of one or more additional taxa each typified by one of its imperfect states, and that these, though they are allowed to be regarded as distinct, are not infraspecific taxa but facets of one and the same taxon. This paradox must, however, be accepted for convenience of nomenclature.

I have tried to provide for what I believe were the intentions of the original sponsors of the Article and to follow as far as possible Cummins's interpretation of its application to the Uredinales which is, I believe, the interpretation of other modern uredinologists. In particular I have kept in mind the following objects:

(a) To provide for the rejection of 'anticipatory names' (as defined by Cummins) such as *Ravenelia cubensis* Arth. & Johnst. (example 5) and *Coleosporium eupatorii* Arth. (example 6) by making them illegitimate. (Para. 3 of reworded Article.)

(b) To provide that recombinations from an imperfect to a perfect genus, such as *Achrotelium lucumae* (Arth. & Johnst.) Cummins, 1940 (example 6) and *Corticium microsclerotia* (Matz) Weber, 1939 (which again are 'anticipatory names'), shall be considered not validly published and hence without status. This must be done in order to provide that the names *Achrotelium lucumae* Cummins, 1956, and *Corticium microsclerotia* Weber, 1951, shall not be regarded as later homonyms. (Para. 4 of reworded Article.)

(c) To provide that names published in the manner of *Mycosphaerella aleuritidis* (Miyake) Ou and the examples 1 and 2, while being considered not validly published as new combinations (see (b) above) shall be considered as the validly published new names of new taxa if the other requirements for valid publication are fulfilled, as they are in the examples cited. (Para. 4 of reworded Article.) I agree with Dr. Donk that this cumbersome method of publishing names for new species in perfect genera should be discouraged, and at his suggestion I have added a note prohibiting such a method on or after 1 Jan. 1966.

I find myself opposed to the interpretation of Cummins, Jørstad and Savile of Art. 59 in its application to types in the Uredinales (see examples 9 and 10), and

have suggested what is to my mind the only logical solution. (Para. 3 of reworded Article.)

I have been unable to think of a reasonable formula which would sanction the practice followed in examples 6, 7 and 8, and can see no alternative to the necessity in such cases for the publication of new names to be associated with the telial types.

I therefore suggest, for consideration, the following rewording of the Article.

Article 59

In Ascomycetes and Basidiomycetes (inclusive of Ustilaginales) with two or more states in the life cycle (except those which are lichen-fungi), the correct name of all states which are states of any one species is the earliest legitimate name typified by the perfect state. The perfect state is that which bears asci in the Ascomycetes, which consists of the spores giving rise to basidia in the Uredinales and of the chlamydospores in the Ustilaginales, or which bears basidia in the remaining Basidiomycetes. However, the provision of this Article shall not be construed as preventing the use of names of imperfect states in works referring to such states; and in the case of imperfect states, a name refers only to the state represented by its type.

When not already available, specific or infraspecific names for imperfect states may be proposed at the time of publication of the name for a perfect state or later, and may contain either the specific epithet applied to the perfect state or any other epithet available.

The nomenclatural type of a taxon of which the name has been ascribed to a genus characterised by a perfect state must be one of which the original description includes a description of the perfect state or of which the possibility cannot be excluded that the original author included the perfect state in his description. If these requirements are not fulfilled the name, although validly published, shall be considered illegitimate.

The recombination of the specific or infraspecific epithet of a name typified by an imperfect state with a generic name characterised by a perfect state shall be considered not validly published as a new combination; but shall be considered the validly published name of a new taxon if the recombining author provides a description (in Latin, on or after 1 Jan. 1935) of the perfect state and indicates a type (on or after 1 Jan. 1958) for the perfect state, and shall be attributed to the author of that name and to him alone. However, publication on or after 1 Jan. 1966 of a recombination based on an imperfect state and applied inclusive of the perfect state shall not be considered the valid publication of a new name for the perfect state.

Examples: (a) *Ravenelia cubensis* Arth. & J. R. Johnston (Mem. Torrey bot. Cl. **17**: 118. 1918), based on a specimen bearing only uredia (an imperfect state), was validly published but is considered illegitimate because it was described in a genus characterised by a perfect state. The correct name is *Uredo cubensis* Cummins (Mycologia **48**: 697. 1956), published as '(Arth. & J. R. Johnston) Cummins' (see Art. 72).

(b) The perfect state described (Sinensia **11**: 183. 1940) as "*Mycosphaerella aleuritidis* (Miyake) Ou n. comb., syn. *Cercospora aleuritidis* Miyake", accompanied by a Latin diagnosis of the perfect state, shall be considered not validly published as a new combination (since the type of the basionym does not bear the perfect state) but validly published as a new name of a new species, which must be cited as "*M. aleuritidis* Ou", based on the material examined by Ou which bore the perfect state. Since this is an undesirable method of publishing the name of new taxon, a name published in this manner on or after 1 Jan. 1966 will be considered not validly published either as a new combination or as a new name of a new taxon. The correct method of publication of this name would be "*Mycosphaerella aleuritidis* Ou, syn. *Cercospora aleuritidis* Miyake", though it is not essential (for the purposes of nomenclature) that the synonymy should be mentioned, and Ou could equally well have chosen any available epithet other than *aleuritidis*.

(c) *Corticium microsclerotia* (Matz) Weber, n. comb., syn. *Rhizoctonia microsclerotia* Matz, was published (Phytopathology **29**: 565. 1939) with a description in English of the perfect state drawn up from specimen different from the type of *Rhizoctonia microsclerotia* Matz. Weber's recombination must nevertheless be considered to be based on Matz's type of *Rhizoctonia sclerotia* and is considered not validly published because this type does not show the characteristics of a perfect state genus. The name is likewise not validly published as a new name of a new taxon based on Weber's material, because no Latin diagnosis was provided. The correct name for this species is *Corticium microsclerotia* Weber in Mycologia **43**: 728. 1951, where a Latin diagnosis was supplied for the perfect state: the epithet *microsclerotia* was not legitimately preoccupied in *Corticium*.

(d) A recombination from a genus typified by a perfect state into one typified by an imperfect state is legitimate (e.g. Arthur's recombinations from *Melampsora* into *Uredo* in Result. Sci. Congr. int. Bot. Vienne, 1905: 338. 1906), though this practice is not recommended.

Article 64

The following amendment will be necessary to Art. 64:

The present section (3) should be renumbered (4) and the following inserted as section (3):

"(3) when it was published in contravention of Art. 59."

In conclusion, I wish to express my thanks to Dr. M. A. Donk for very helpful criticism.

DAS PROBLEM DER NOMENKLATUR CHEMISCHER TAXA

P. Tétényi (Budapest)

Vent beschäftigt sich (Taxon, vol. 9, p. 53) mit dem Problem der Nomenklatur chemischer Taxa und bestimmt: "es handelt sich auch bei solchen Sippen in allen Fällen um *Pflanzen*, die Unterschiede liegen *nur in der Anwendung verschiedener Methoden*". Die Wissenschaft kommt dementsprechend "an Quantität und Qualität zunehmenden Unternehmungsmethoden" zu immer weiteren Kenntnissen, aber "an unseren Pflanzen stellen wir doch schliesslich *keine anderen* als morphologische Merkmale im weitesten Sinne fest". Den Unterschied an morphologischen Merkmalen kann man mit verschiedenartigen Instrumenten erkennen und "auch aus dieser Betrachtung ergibt sich eine stärkere Akzentuierung *der Objekte* als der Methoden". Bei der Einführung eines neuen Instrumentes müsste man charakterisierte Taxa entsprechend besonders bezeichnen, was eine weitere Komplizierung unserer Nomenklatur bedeuten würde.

Der Gedankengang ist wirklich interessant und die Schlussforderung, dass eine weitere Komplizierung der Nomenklatur zu meiden wäre, besonders anziehend.

Ist es aber auch tatsächlich so, dass sich die Differenzen in den Pflanzengruppen nur aus der Anwendung von unterschiedlichen Forschungsmethoden und -mitteln ergeben?

Nein, die Differenzen bestehen in den einzelnen Pflanzengruppen auch unabhängig von den angewandten Mitteln und Methoden und auch unabhängig davon, ob wir sie bereits wahrgenommen haben, oder ob ihre Entdeckung einer späteren Zukunft über-

lassen bleibt. Immerhin bedeutet es aber einen Fortschritt, dass wir durch die neuen Forschungsmethoden gesperrt von mir und -mittel in der Lage sind, nicht nur morphologisch-anatomische, sondern auch schon im Chemismus bestehende Differenzen aufzudecken. Dabei lässt es sich schon klar erkennen, dass die Entwicklung dieser Mittel und Methoden in der Zukunft auch die Erkenntnis der zwischen den Taxa liegenden biophysischen Differenzen gestatten wird, auf die z.B. die Forschungsresultate des Energie-Niveaus von Blagowestschenski hindeuten. All dies bezeugt jedoch, dass die Unterschiede in den Pflanzengruppen solche objektive Tatsachen darstellen, die auch unabhängig von den angewandten Forschungsmitteln und Methoden bestehen, und die wir im Laufe der weiteren Entwicklung immer mehr kennenlernen werden.

Aber auch bezüglich des Wesens der Differenzen kann die Vereinfachung, laut der es nur eine Art von *morphologischer* Differenz gebe, kaum akzeptiert werden. Die Unterschiede können sich doch in und aus mehreren Relationen ergeben. So können sie sich z.B. auf den Aufbau des pflanzlichen Organismus beziehen oder geradeso auf die sich im Organismus selbst abspielenden physiologischen Prozesse, oder aber nur auf die Verschiedenheit in gewissen Phasen oder Teilen derselben. Es kann vorkommen, dass morphologische und physiologische Unterschiede gleichzeitig bestehen, aber das muss nicht unbedingt und nicht in allen Fällen so sein. Differenzen in der Blütezeit, Unterschiede in der Widerstandskraft gegenüber gewissen Krankheiten sowie gewisse Eigentümlichkeiten im Stoffwechsel verweisen oft auf die genetische Differenziertheit morphologisch homogener Pflanzengruppen. Im Grunde genommen bedeutet dies jedoch, dass sich die Taxa nicht immer und nicht in erster Linie ihrer Form nach, sondern in ihren qualitativen Merkmalen unterscheiden; die bestehenden Unterschiede sind also qualitativ bedingt.

Unter solchen Umständen ist es aber kaum vermeidbar, dass wir diese Differenziertheit auch in den Namen der Taxa zum Ausdruck bringen; wir können daher von einer Weiterentwicklung der Nomenklatur kaum Abstand nehmen. Im Gegenteil, es wäre sogar viel richtiger, wenn sich die morphologische Nomenklatur auch zur Bezeichnung der anderen, auf qualitativer Grundlage beruhenden Taxa eignen würde. Damit könnten wir im Falle chemischer Taxa darauf hinweisen, dass die genetische Differenz nicht nur — oder überhaupt nicht — morphologischer Natur, sondern physiologischen Charakters ist.

Hierbei kann aber nicht von der Annullierung bestehender Nomenklaturregeln die Rede sein, sondern viel eher davon, dass durch Einschaltung einer neuen Erscheinung der Wirkungsbereich der Nomenklatur ausgebreitet wird. Dass aber dann im neuen Lichte betrachtet das Alte sich zum Grenzfalle verwandelt, beweist heute die Entwicklung sämtlicher Wissenschaften.

Darüber, ob irgendeine von den von uns 1957 vorgeschlagenen Benennungsarten, oder aber eine abweichende, zur Bezeichnung der chemischen Taxa besser geeignet ist, wird die Praxis entscheiden. Wahrscheinlich wird die Nomenklatur dadurch komplizierter, was aber keineswegs das zu erreichende Ziel ist, sondern eher eine zu bekämpfende Schwierigkeit.

Es ist kaum mehr möglich, die Augen vor der realen Wirklichkeit zu verschliessen; da aber das Bestehen der chemischen Taxa etwas Reales ist, muss auch eine Möglichkeit zu ihrer Benennung gefunden werden, nachdem die Fähigkeit der Namengebung, der Abstraktion und die Gestaltung von Begriffen tatsächlich gleichaltrig mit dem Menschen ist.

REMARKS ON SUPERFLUOUS NAMES AND LATER HOMONYMS

F. R. Fosberg (Falls Church, Va.)

In his article on Superfluous names and later homonyms (Taxon 9: 147-150. 1960) Furtado makes a number of suggestions, two of which I would like to discuss.

He suggests that the rule that names are illegitimate if they were superfluous when published (Paris Code Art. 64(1)) be deleted from the Code. He points out cases in which the application of this rule has resulted in inconvenience, many of which are, of course, known to all of us. He uses as an argument for changing the Code by deletion of this rule the fact that two prominent botanists, Ross and Van Steenis, have chosen to disregard the rule in particular cases. A person with Furtado's familiarity with nomenclature should, I think, realize that there are few of the rules in the Code that one or another prominent botanist has not sometime broken or disregarded. A logical end to this line of argument would be no code at all.

Some years ago (Taxon 2: 89. 1953) I suggested that few taxonomists realized the full implication of this rule, and that it might be well before the Paris Congress to consider its deletion or revision. I suggested that "If it were considered that less future changes would result from abandoning this Rule, the matter should, at least, be discussed." I did not put forward a proposal to delete the provision for the good reason that I did not, and do not, know the answer to this question.

There seems no doubt that it would have been a good idea to delete this provision from the Vienna Code along with such other anomalies as the tautonym rule, just as it would have been better to retain the "Kew Rule". However, these provisions have been accepted and applied by botanists for over fifty years in determining the correct names of plants. The question of retaining these features in the Code seems now at the point where it is no longer appropriate to decide it on the basis of ponderous legalistic arguments. The only tenable reason for making changes of this sort now would be that to retain the features as they are would clearly result in a substantially greater number of inconvenient name changes than would be caused by changing them. To nullify the conscientious decisions of hundreds of botanists made during the entire period that the International Rules have been widely accepted would deal a blow to general confidence in the Code that would need a great deal of justification. The fact that three congresses have met since Furtado first suggested deletion of this rule, and two congresses since I suggested that the matter should receive careful consideration, without any serious attempt to estimate the consequences of such a change suggests that in most people's opinion the change is undesirable. I am inclined now to agree.

The other point in Furtado's article that I would like to comment on is his remarkable interpretation of the homonym rule. He correctly points out that, as the rule is now worded, identical names based on the same type are not considered homonyms. He cites my substitution of the name *Serianthes dilmyi* Fosb. (1959) for *Serianthes grandiflora* Benth. (1844) which was superflous when published because Bentham included in his circumscription the legitimate and available name *Acacia myriadenia* Bert. He argues that although *S. grandiflora* Benth. (1844) was for this reason illegitimate, *S. grandiflora* Benth. (1846) is available and not a later homonym, because it was based on the same type. Bentham had removed *Acacia myriadenia* from the circumscription of his *S. grandiflora*. He is certainly

right that the type is the same, but he apparently fails to realize that these are not two names, but one and the same name, only the circumscription having changed. If these are accepted as two names I see no obvious reason for stopping short of accepting every separate use of every name as a new name, which is, of course, an absurdity. The fact that I read his paragraph over twice before I saw the unsoundness of his argument points up, to me at least, the dangers inherent in well constructed logic based on wrong assumptions. The fact that Sprague, Rehder, and Hubbard indulged in the same kind of fallacious reasoning does not at all affect my conclusion that misidentifications by later authors, or changes in circumscription even by the same author, may not today be treated as new names. Of course in the past this was frequently done, and such usages seem best treated as later homonyms if they were not ascribed to the original authors. This is no excuse for our continuing to create such homonyms now, however.

In his next paragraph Furtado seems to sense the unsoundness of his previous argument and suggests clarification of the homonym rule in the Code. This may be desirable, but he is not explicit as to what is needed. His following paragraph I must confess I fail completely to comprehend. His reference farther on to my regarding *Brugmansia candida* Pers. as validly published seems based on a complete misapprehension. I did not say that Persoon's name had been validated by reference to a misinterpretation of *Datura arborea* L. I said it had been validated by reference to the previously and effectively published *description* of the plant under another name, which is precisely what Article 32 calls for.

As to whether or not *B. candida* is superfluous, this rests on whether *Datura arborea* R. & P. is regarded as the same as *D. arborea* L. If Persoon had cited it as *Datura arborea* L. sensu R. & P. there would be no question. *D. candida* would not be superfluous. If he had cited *Datura arborea* L. it be superfluous. I quite realize that in such cases it is frequently assumed by later workers that the author was merely citing a usage of an earlier name, even though he ascribed it to other than its original author. However, much less confusion results when what an author actually said is followed, rather than what we assume he must have meant. Here it is clear that most modern authors in Persoon's place would have said *D. arborea* L. sensu R. & P. It is not so clear what a man in Persoon's time would have meant. Almost down to the present in the literature one finds such forms as *Datura arborea* R. & P. non L. How are we certain that when this usage is followed the author does not regard Ruiz and Pavon as having created a new name. Accepting what a man said, rather than what we think he meant or should have said, will go farther toward unambiguous usage than making assumptions.

Unless we assume that Persoon was citing Linnaeus' *Datura arborea* the case of *D. candida* is not the same as those of *Serianthes grandiflora* or *Moringa oleifera*. In any event, the *Datura* case is a borderline one, and although it is hard to be positive about such, I accepted the name as legitimate to avoid a change.

It seems a great pity that where an undesirable practice has been incorporated in the rules we cannot simply change it and wipe the slate clean, starting afresh. This we cannot do, however, without accepting the consequences, which are frequently unpalatable. We may, in the process of avoiding certain future difficulties cause many decisions of the past to be wrong. The unexpected changes in familiar names accepted under a rule in the past may be far more inconvenient than the future difficulties that a change is designed to avoid.

SYSTEMATICS ASSOCIATION COMMITTEE FOR DESCRIPTIVE TERMINOLOGY

As the present Chairman of the Systematics Association (of Great Britain) and of its Committee for Descriptive Terminology, it falls to me to introduce a series of publications which results from the co-operative effort of so many people from so many different countries that the authorship must necessarily be anonymous. It would be entirely erroneous to attribute it to me as my contribution to it has been small.

Descriptive taxonomy is an historically based branch of biology which cannot be efficiently undertaken without continual reference to the publications of earlier workers. New criteria for the differentiation of taxa are necessarily accompanied by the introduction of new terms or the borrowing of terms from various sources, often with a change or extension of meaning. A vocabulary of descriptive terms is thus gradually built up but, as in the evolution of a language, words change their significance in the course of time and a taxonomist unaware of such changes would assume that the words of an earlier author were intended to convey the same meaning as they do in present-day usage. Even within the life-time of one author, it is frequently to be found that he has made alterations in his technique of description. If one finds that one has been using a term erroneously or contrary to general usage it would be both obstinate and arrogant to continue in wilful error for the sake of personal consistency.

Added to this, many languages are involved and the different meanings attributed to the same or apparently equivalent words are sometimes considerable. The word 'oval' for example has a different meaning on the continent of Europe from that usually attributed to it in Great Britain. The shape described as 'lanceolate' has varied very considerably both in time and place. Such examples could easily be multiplied.

There can be no doubt about the advantages which would result from a more standardized vocabulary of descriptive terminology; but one cannot dictate: one can only suggest certain standards in the hope that they will prove to be generally acceptable.

Our first contribution, this bibliography, is a basis, to some extent at least, for the more practical matters on which we are already engaged; but it may prove useful in various other ways. We are at present proceeding with an attempt to standardize the terms employed for the basic geometrical shapes and hope to publish the first results shortly. After that we are well aware that matters become more difficult as they become more subjective. How far we can usefully go we are as yet uncertain; but to be obsessed by the fear of future difficulties is the surest way of doing nothing at all.

In spite of the anonymity of authorship on which we have decided, I feel that it is only just to acknowledge Dr. W. T. Stearn's major contribution to the bibliography and to express the Committee's thanks to Mr. John Lewis for making numerous additions and for preparing it for the press.

A. W. Exell

I. Preliminary list of works relevant to Descriptive Biological Terminology.

The following list has been compiled from a number of sources, including contributions from correspondents of many different nationalities. We hope that it includes most of the important literature requiring consideration in dealing with the technical terminology used in the description of the structure of organisms in general. It does not attempt to cover special terms given to organs in restricted groups,

although many such are naturally included. The list is heavily biassed towards botany; for each branch of zoology uses, to a large extent, its own set of technical terms and zoologists mostly seem to be less interested than botanists in the standardization of terms for general usage.

Any work describing organisms or dealing with morphology may be said to be concerned with terminology but a distinction can be made between those which are historically important or in which useful definitions are given and those in which the terminology is merely, so to speak, incidental. Of the latter we have tried to select those which have had influence through the eminence of their authors or have been used in various countries as general examples to be followed. Floras and other primarily taxonomic works have been included when they contain glossaries of reasonable size, but some with smaller glossaries are given when they are the sole or most important example in a given language.

Each entry includes the date of first publication, the title and place of publication. Of later editions, the most recent is given and, if there be more than two, intermediate ones are included when they are important and especially when changes of title, number of volumes, editor, reviser or place of publication have occurred. References are given to editors, translators and revisers and to different forms of surname; cross-references link related works; separate references are not given to joint authors unless those other than the one first mentioned on the title-page are considered to be more important in the history of terminology than the first-named author.

Corrections or important additions should be sent to Mr. John Lewis at the British Museum (Natural History).

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NEWS AND NOTES

AMENDMENTS CONSTITUTION I.A.P.T.

The following report was received on the proposed amendments to the constiution of the I.A.P.T. as put forward in the circular letter to the members dated 1 May 1960:

Dear Dr. Stafleu:

Herewith is the report of the scrutinizing committee to the secretary of the International Association for Plant Taxonomy as established in your letter of April 13, 1960, to members of the Executive Committee of the I.A.P.T.

A total of 288 ballots were cast and the results may be tabulated as follows:

In favor	276
Opposed	6
Ballots improperly marked	6

It seems, therefore, that the amendments to Articles 6 and 9 of the Constitution of the I.A.P.T. are accepted by a large majority.

However, several members pointed out that the proposed new wording of Article 9 is not entirely accurate since the Association cannot elect the immediate past president, who automatically succeeds to this office. Following the suggestion of several members, we would prefer that Article 9 be left as it is in Taxon 3: 251. 1954, as far as "e. a treasurer." At this point we would suggest the insertion of a new paragraph as follows: "The immediate past president shall be ex officio a member of the executive committee." Please refer this report to the Secretary of the I.A.P.T.

Your scrutinizing committee,

A. C. Smith, Chairman
Richard S. Cowan, Secretary
John A. Stevenson
Louis O. Williams

Washington D.C. 7 September 1960.

XEROX CERTAINLY DOES NOT CONSTITUTE EFFECTIVE PUBLICATION

C. V. Morton (Taxon 9: 192. 1960) has recently come to the conclusion that American doctoral dissertations which are available from University Microfilms, Ann Arbor, Michigan, are effectively published under Article 29 of the current International Code of Botanical Nomenclature (Paris Code). Dr. Morton is incorrect in his conclusion.

Dr. Morton stated (1) that "Some University dissertations are now being microfilmed in lieu of publication, which is doubtless a practice primarily because of the present high cost of printing." While this may be true in the case of some American universities, there are many that have *never* required that doctoral dissertations be published. The whole intent and purpose of University Microfilms is to make *unpublished dissertations more available, not to publish them.* The availability of a xerox copy of a dissertation does not constitute effective publication any more than does the availability of typescript copies in university libraries.

Mr. Morton wrote "This Xerox process involves enlarging microfilm and printing it by a sort of offset process on regular book paper; the whole is bound as a book. .... These Xerox reproductions are books in every sense of the word, and presumably they are as permanent as any sort of offset process would be." Dissertations in most American universities are typed on 100% rag paper and bound as a book and are apt to stand the test of time better than xerox reproductions. If xerox duplication constitutes publication, then why does not the mere binding of a typewritten manuscript? The answer is simply that Article 29 (2) does not allow it. A xerox copy is simply a mechanically reproduced copy of a typescript, just as is a microfilm.

It may be of interest to quote the following from the agreement between a doctoral candidate and University Microfilms: "This is an agreement between the author (a) and University Microfilms, Ann Arbor, Michigan, providing for the publication by microfilm of the submitted manuscript (c) in partial fulfillment of requirements for the doctoral degree (b) and subject to the following conditions: .... One positive copy of each dissertation will be deposited in the Library of Congress, and will be listed in their Subject and Author catalog. The author (a) is free to publish all or any part of his manuscript (c) at any time by any method except in microfilm." It is quite clear that reproductions made by University Microfilms are microfilms or their equivalents.

My doctoral dissertation is available from University Microfilms either on microfilm or xerox, but I most emphatically do not consider it published by either of these means. Although I have not communicated

with Drs. D. F. M. Brown, R. L. Hauke, and R. F. Blasdell, I doubt very much that they would consider their respective dissertations published simply because they are available in a xerox reproduction.

The intent of Article 29 (2) is quite clear. Must we add the word xerox and the names of all the still uninvented methods of reproducing typescript mechanically to the word microfilm in this article?

John H. Thomas, Stanford, California

THE AMERICAN SOCIETY OF PLANT TAXONOMISTS

At the recent meeting of the American Society of Plant Taxonomists at Stillwater, Oklahoma the following officers were re-elected to serve one year terms:

Dr. Mildred Mathias (University of California at Los Angeles) Chairman of the Council for 1961.

Dr. C. Ritchie Bell (University of North Carolina) Secretary for 1961.

Dr. Richard W. Pohl (Iowa State University) Treasurer for 1961.

Other appointments made by the Council are as follows:

Dr. Rogers McVaugh was reappointed as editor of *Brittonia.*

Dr. Rolla Tryon (Harvard University) and Miss Annetta Carter (University of California at Berkeley) were appointed to serve four year terms on the editorial board of *Brittonia.*

Dr. A. E. Radford (University of North Carolina) was appointed as the Society's representative on the editorial board of the American Journal of Botany.

Dr. Robert Thorne (University of Iowa) was appointed as the American Society of Plant Taxonomists' representative to the American Association for the Advancement of Science.

Dr. Reed Rollins (Harvard University) was appointed as the Society's representative to the American Institute of Biological Science.

Dr. Robert Ornduff, University of California, Berkeley, received the Cooley Award for the best paper presented at the annual meeting of the Society. His paper was entitled "Hybridization between *Lasthenia* and *Crockeria* (Compositae): its taxonomic and evolutionary implications.

ESTABLISHMENT OF A CARD FILE ON CURRENT, ACTIVE, TAXONOMIC RESEARCH PROJECTS

Dr. Raymond C. Jackson, of the Department of Botany, University of Kansas, Lawrence, Kansas, is establishing a card file on all research problems in the field of plant taxonomy that are currently and actively underway in North America. All botanists involved in taxonomic work are earnestly requested to support this project, which is under the sponsorship of the American Society of Plant Taxonomists, by sending to Dr. Jackson information on your current research and the research of your students. Such information should identify the taxon or taxa under investigation, the primary trend or emphasis of the project (morphological, ecological, cytological, etc.) and the name and address of the person or persons actually doing the research. If the project is being supported by N. S. F. or other funds this information might be included, as might any tentative schedule for completion of the project.

The object of the file is to eliminate duplication of taxonomic effort and to foster cooperation between those who might be working on a common problem from different approaches. Please address your information, and inquiries, to Dr. Jackson.

REGNUM VEGETABILE

New issues

Vol. 18 *Repertorium Plantarum Succulentarum no. IX, 1958,* edited by G. D. Rowley (32 pp., June 1960). Free for all *members* (for 1960) *of I.A.P.T. Others* D.fl. 2.25.

Vol. 19 *World Report on Palaeobotany III.* An international bibliography of palaeobotanical Litterature published in 1957-1959, with additional entries for 1950-1956, an Index to all three World Reports (1950-1956), the fourth list of addresses of the palaeobotanists of the world, a report on the 1959 assembly of the I.O.P., and the present statutes of this Organization. Edited by Edouard Boureau, in collaboration with C. A. Arnold, I. C. Cookson, K. R. Surange (198 pp., August 1960).

Members of I.O.P. and institutional members of I.A.P.T. (for 1960): free.

Regular personal Members of I.A.P.T. D.fl. 11.40 ($ 3.—, £ 1.1.—).

Others: D.fl. 19.00.

Note: The members of the I.A.P.T.-I.O.P. receive free copies of the World Reports but

not of the various editions of Index Herbariorum, part I; regular personal members of I.A.P.T., not belonging to the I.O.P., receive free copies of Index Herbariorum part I, but not of the World Reports.

OFFICE

The International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

MEMBERSHIP FEES

Members are requested to pay their membership fees to the regional treasurers.

Members in countries without regional treasurers are requested to make payable their subscriptions to *Messrs Vlaer & Kol, Utrecht, Netherlands,* crossed: *"a.c. International Bureau for Plant Taxonomy".*

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I.A.P.T.—DEUTSCHLAND

Für die Mitglieder der I.A.P.T. in Deutschland besteht die Möglichkeit, ihre Mitgliedsbeitrage und andere Zahlungen direkt auf das Postscheckkonto 7247 Vlaer & Kol, Utrecht, zugunsten des Internationalen Buros für Pflanzen-Taxonomie und Nomenklatur zu überweisen.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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MRS. AGNES ARBER

BOTANIST AND PHILOSOPHER *

1879 - 1960

Mrs. Agnes Arber, F.R.S., the botanist and philosopher, died on Tuesday 22 March 1960 in her eighty-second year.

Born in 1879, she was the eldest daughter of the artist H. R. Robertson and sister of the artist Janet Robertson and the classical scholar Professor Donald S. Robertson. She grew up in a cultured circle and had an inherited skill in drawing; her upbringing and natural gifts thus combined to yield the scholarly appeal of her writing and the grace and accuracy of the illustrations to her technical books and papers in learned journals. Her college career was passed at University College, London, and Newnham College, Cambridge. In 1909 she married the Cambridge palaeobotanist E. A. Newell Arber (1870-1918), who, as son of Professor Edward Arber, of *English Garner* renown, had a like cultural background and a like attraction to the study of form within the plant world.

Stimulated by the work of Ethel Sargant, with whom she collaborated, Mrs. Arber's most important early investigations concerned the monocotyledons, on which she had worked before her marriage, more especially their anatomy and morphology. This led to a long series of papers, mostly in the *Annals of Botany*, and culminated in three books, *Water Plants* (1920), *Monocotyledons* (1925), and *The Gramineae* (1934). Her first book was, however, her *Herbals, their Origin and Evolution* (1912: second edition, much enlarged, 1938). All have become classics within their field; all are characterized by breadth of outlook, philosophical insight, profound learning, and meticulous attention to detail, and are written with a clarity and charm of style which places them outside and above ordinary botanical literature. In her work on grasses, for example, she "sought primarily to detect the pattern and rhythm underlying that complex of plant types called the Gramineae," and it is entirely in keeping with this partly philosophical, partly aesthetic but never unscientific approach and with her wide reading that even in her technical and apparently very specialized publications writers as diverse and non-botanical as Thomas Aquinas and Samuel Taylor Coleridge are relevantly quoted.

Over the years the metaphysical problems implicit in the study of botanical detail came to have an ever greater fascination for her; she became convinced of "the vital necessity of a linkage between morphological and philosophical thought." From the study of botany and of Spinoza she went on to metaphysics in general. Out of this came a paper on Boethius and Spinoza (1943), *Goethe's Botany* (1946), *The Natural Philosophy of Plant Form* (1950), *The Mind and the Eye* (1954) and *The Manifold*

* The Times, 24 March 1960, by kind permission.

and the One (1957). The *The Mind and the Eye,* which is concerned with the nature of biological research and the bases of biological thinking, may prove the most important of these; she herself modestly described it as a rushlight seeking to throw a little light upon the biologist's road to reality.

Agnes Arber 1911

From 1927 onwards all her research was done at home in Cambridge in a bedroom turned into a laboratory. Working there in solitude, with her mind free to brood and to search for meaning and the right words to communicate it, she learnt from her own experience, no less than from the examples of Descartes and Spinoza, Darwin and D. H. Scott, that the uninterrupted periods of still meditation are essential if the deeper insight is to be won, and she deplored the tragic loss to our culture likely to come as contemplative leisure fades irrevocably from scientific life through emphasis on team-work research in university, state and industrial laboratories. For her this fruitful exemption from "the daily grind of academic duties," "enforced

day-to-day contacts," was made possible by private means and grants in aid from the Royal Society and a Leverhulme Research Fellowship.

Appreciation of her work also found expression in her election to fellowship of the Royal Society in 1946 as the third woman to receive that honour, and the award of the Linnean Medal to her by the Linnean Society in 1948. It was with full justice and accuracy that the late Professor A. G. Tansley wrote in 1952: "Dr. Agnes Arber is the most distinguished as well as the most erudite British plant morphologist."

* * *

[The reprinting of the above obituary notice of Agnes Arber, which appeared in *The Times* of 24 March 1960, provides an opportunity to make some additions giving information which the writer of the notice either left out or did not know.

Mrs. Arber was born in London on 23 February 1879 and educated at the North London Collegiate School for Girls, 1887-97, University College, London, 1897-99, and Newnham College, Cambridge, 1899-1902. In 1902 she became research assistant to Miss Ethel Sargant (1863-1918), an amateur botanist of eminent achievement in cytology and anatomy, whose private means enabled her, after studying under D. H. Scott in the Jodrell Laboratory at Kew, to build a private laboratory at Quarry Hill, Reigate. Mrs. Arber always remembered with gratitude her employment for a year by Ethel Sargant who initiated her into the methods of discovery. According to Mrs. Arber, 'the laboratory was rather a puzzle to the neighbourhood ... the local excise officer in particular was greatly worried in his mind, and used to pay surprise visits at short intervals, because he had a theory that as soon as his back was turned, the little still (with which the supply of distilled water was made) was used for the manufacture of illicit spirit'. This experience of working in an isolated private laboratory largely determined Mrs. Arber's course of work in later years; moreover Ethel Sargant's research on monocotyledons directed her to them as a subject for further investigation. As Mrs. Arber said in 1926, when addressing students at Girton College, 'the concentration of mind necessary for independent thought is far more easily achieved in a place where one can get a generous measure of solitude than in a populous laboratory where people are incessantly running in and out, and in Ethel Sargant's words — 'Independence is the essence of research'. Moreover, if you are all by yourself in a laboratory where you can start everything from scratch, and have no convenient laboratory man to pull you out of practical difficulties, you find yourself, willy-nilly, putting more brain-work into your technique, and hence into your job as a whole; and you are less liable to turn out the dreary, mechanicalised, standardised results which are the curse of certain big laboratories where research has almost become a form of routine work'. This must have been the consideration which led Mrs. Arber about 1926 to convert part of her house into a laboratory instead of using the facilities of the nearby Cambridge University laboratories where she would have been very welcome. In 1903 she left Miss Sargant's laboratory to do research and teaching at University College, London, under Professor F. W. Oliver, as the holder of a Quain Studentship in Biology (1903-08) and later (1908-09) of a Lectureship in Botany. She received the degree of D. Sc. from the University of London in 1905 for research on the fertilization etc. of *Torreya californica*. In 1909, on her marriage to E. A. N. Arber, she moved to Cambridge where the rest of her busy and studious life was spent. Her daugther, Miss Muriel Arber, informs me that, during the early years of her marriage, Mrs. Arber did a certain amount of lecturing, demonstrating and private tuition at Newnham College, Cambridge, of which she was a Research Fellow, 1912-13, 1918-20. Mrs. Arber never sought publicity and was reputed a recluse; in fact she was a genial and gracious person whose kindness and friendship will be gratefully remembered by the students of botany she helped and encouraged. — W. T. Stearn.]

IVème REUNION PLENIERE DE L'ASSOCIATION POUR L'ETUDE TAXONOMIQUE DE LA FLORE D'AFRIQUE TROPICALE

A. Fernandes (Coimbra)

Placée sous le haut patronage de Son Excellence le Ministre d'Outre Mer du Portugal et sous l'égide de la "Junta de Investigações do Ultramar", la IVème Réunion Plénière de l'Association pour l'Étude Taxonomique de la Flore d'Afrique Tropicale s'est tenue à Lisbonne (16-21 septembre) et à Coimbra (22-23 septembre); 50 membres y ont assisté.

La séance inaugurale, présidée par Son Excellence le Ministre d'Outre Mer du Portugal et où fut présent Monsieur le Prof. Dr. J. Carrington da Costa, président de la Commission exécutive de la "Junta de Investigações do Ultramar" et président d'honneur de la Réunion, a comporté une allocution par le Secrétaire Général de l'Association, Prof. Dr. Abílio Fernandes, et une conférence faite par Monsieur le Dr. Armando Zuzarte Cortesão, ayant par titre: The Portuguese Discovery and Exploration of Africa.

Les sessions de travaux qui ont eu lieu le 16 et 17 septembre ont été consacrées à la lecture de communications concernant le thème: Histoire de l'exploration botanique de l'Afrique au sud du Sahara. Les exposés suivants ont été présentés: A. Aubréville — L'exploration botanique de l'Afrique Occidentale Française; R. W. J. Keay — Botanical Collectors in West Africa prior to 1860; F. N. Hepper — Botanical Collectors in West Africa, except French territories, since 1860; L. Grandvaux Barbosa — Botanical Collecting in the Cabo Verde Islands; A. W. Exell — Botanical Collecting in the Islands of the Gulf of Guinea; F. A. Mendonça — Botanical Collectors in Angola; A. D. J. Meeuse — A Short History of Botanical Exploration in the Territory of South West Africa; H. Humbert — Histoire de l'exploration botanique à Madagascar; F. A. Mendonça — Botanical Collectors in Moçambique; A. Fernandes & Rosette Fernandes — Les voyages de Manoel Galvão da Sylva au Moçambique; H. Wild — Biographical Notes on Botanical Collections in the Federation of Rhodesia and Nyasaland; F. White — A History of Plant Collecting in Northern Rhodesia; J. B. Gillett — The History of Botanical Exploration in the area of the "Flora of Tropical East Africa"; G. Siméon & R. Tournay — Les collections rassemblées de 1870 à 1908 par les missions scientifiques allemandes et par Th. Kassner dans le territoire de la République du Congo (ex Congo Belge); G. Cufodontis — A preliminary contribution to the knowledge of the botanical exploration of North-Eastern Tropical Africa.

La session du matin du 21 septembre a été consacrée à la présentation de communications concernant le thème: L'anatomie, la morphologie du pollen, la blastogénie et la caryologie comme auxiliaires de la Systématique. Le débat a été ouvert par Monsieur le Professeur Dr. J. Léonard avec l'exposé: Atttitude du systématicien à l'égard de l'emploi de caractères autres que ceux basés sur la morphologie traditionnelle. Cet exposé, de la plus grande actualité, a suscité un grand intérêt et a été suivi d'une longue discussion à laquelle beaucoup de participants ont pris part. Ensuite, les communications suivantes ont été présentées: O. Hedberg — Modern taxonomic methods and the flora of Tropical Africa; G. Erdtman — Modern aspects of palynology with particular reference to Africa; A. Fernandes — Sur la position systématique de la famille *Oliniaceae;* D. Normand — Observations xylologiques sur les espèces africaines de *Dacryodes;* N. K. B. Robson — The taxonomic position of the genus *Ficalhoa.*

Dans les sessions de l'après-midi du 21 septembre et dans celle du matin de 23, les communications libres suivantes ont été présentées: A. V. Bogdan — Hybridization in the *Setaria sphacelata* complex in Kenya; G. Cufodontis — On the distribution of the genus *Pittosporum* in Africa and in the World; C. N. Tavares — Sur quelques Physciacées de l'Angola et du Moçambique; E. J. Mendes — Preliminary report on a botanical journey to the Bié-Cuando — Cubango District, Angola, 1959-60; M. Myre — A Grassland type of the South of the Mozambique Province (présentée par H. Wild); J. Arènes & P. Jaeger — Les *Acridocarpus* des Plateaux Gréseux du Soudan Occidental; N. Hallé — Sur les *Cola* et *Chlamydocola* (Stercul.). Remarques, additions et divisions sous-génériques nouvelles; H. C. D. de Wit — A contribution to the method of teaching Plant Systematics; J. B. Gillett — Brief report on the progress of the "Flora of Tropical Africa"; J. K. Morton — The Upland Floras of West Africa: their composition, distribution and significance in relation to past climatic changes; C. F. A. Onochie — The use of field characters in tree identification; A. A. L. Pitot — Sur deux *Isoëtes* africains nouvellement nommés; A. Fernandes & J. Barros Neves — Sur la caryologie de quelques Monocotylédones africaines.

L'après-midi du 23 septembre a été consacré à la discussion des affaires administratives de l'Association, ainsi qu'à la désignation du nouveau Sécrétaire Général. Monsieur le Professeur Dr. Rodolfo E. G. Pichi Sermolli, de l'Institut Botanique Hanbury de l'Université de Gênes, a été élu à l'unanimité des voix pour la prochaine période de 3 ans.

SOME PROPOSALS, MOSTLY CONCERNING THE NOMENCLATURE OF FUNGI*

B. P. Vassilkov (Leningrad)

1. On Article 13, f. Fungi caeteri. — To treat the date of the publishing of Fries's Systema Mycologicum, vol. 1-3 as having been 31 Dec. 1821, not 1 Jan. 1821.

In consequence of such a change all works of other authors which were published in the same year would be considered to have appeared earlier than the starting point, with all the consequences that entails. It especially concerns S. F. Gray's A Natural Arrangement of British Plants, 1821.

In 1941 Roger succeeded in proving that this book was published some months later than Fries's work, and this was enough to begin a mass change of the names of genera and species which had been used for a long time. This fact provoked lots of proposals for the conservation of names of genera (Nomina generica conservanda). In this way, instead of improving nomenclature, a great confusion resulted, which will be stopped if the starting point is transferred, as is suggested above.

2. On Article 46, Recomm. 46A and on Article 50, Recomm. 50D.

In order to avoid confusion and lack of precision in the Rules it is necessary to delete both these Recommendations.

These Recommendations permit the insertion, after the name of a taxon but before the name of the author of its valid publication, of the name of another who published the name of the taxon before the starting point of the Nomenclature of the group concerned (Recomm. 50D) or who only proposed it without publishing it, with the use of the connecting word "ex".

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* These proposals were received in July 1959 and could no more be taken into consideration by the IXth International Botanical Congress.

Nowadays this short word ex is written by some authors and not by others; in some groups of plants it is used, in others not; some French authors apply it, but somewhat differently from others.

In so far as nomenclature does not pursue any historical aims it is useless to permit this practice. It indicates synonymy, which is a matter of history, and there it is appropriate to speak about the author of a non-valid name of a taxon, but even there this reference should be inserted in square brackets as a non-obligatory one.

3. It is necessary to insert a new Article or Recommendation dealing with the uniform citation of the names of type species of genera.

The type-species of genus Tylopilus, for instance, is cited now as Boletus felleus Fr., and now as Tylopilus felleus (Fr.) Karst. or both these names are used.

In this case it is more convenient to cite both these names in this way:

Gen. Tylopilus Karst. . . Typus: Tylopilus felleus (Fr.) Karst. (Boletus felleus Fr.).

4. It is desirable to unify the spelling of such words as mycorrhiza and mycorhiza (resp.: cladorrhizus, haplorrhizus). The first spelling corresponds with Greek, the second is original A. B. Frank's original spelling (1885).

5. It is desirable to unify the spelling of the name of the genus: Nematoloma — Naematoloma. In this case and in many others it is often written as Nema . . . ., but the Karsten's original spelling (1879) was Naematoloma.

MONTREAL REPORT COMMITTEE FOR FUNGI

LETTER TO GENERAL COMMITTEE

To the Members of the General Committee

The report presented by the committee for Fungi and Lichenes at the Montreal Congress was referred to the combined old and new committees for Fungi and Lichenes for further study and report to the General Committee.

I enclose the report from the secretary of the present committee, who acted also at our request, as the secretary for the combined committees. This report consists of:

1) a letter from the secretary, Dr. M. A. Donk, to the undersigned
2) a copy of the Montreal report (1959)
3) the summary of voting

For your guidance I take the liberty to add the following comments:

(i) Only half the members took part in the voting. If all had participated the results might have been completely different. Therefore the following remarks are to be understood as if supplemented by "as far as indicated by the voting-forms received back". It should not be forgotten, however, that there were many lichenologists among the group: this may also explain why only half the members voted.

(ii) The emendation of Art. 32 recommended in the Report (its item 1) no longer received any considerable support.

(iii) Opinions are still divided as to the typification of pre-starting-point names validated on or after the starting-point date (Item 2 of the Report). The mail-vote relating to Prop. A to Art. 13 showed a slight majority in favour of its acceptance (Yes, 31; No, 24; Edit. Comm. 30; only mycologists voted); the Committee at Montreal rejected it, accepting Prop. F to Art. 13 which was rejected by mail-vote (Yes, 18; No, 33; Edit. Comm. 133), the possibility for special provision for Fungi being left open (cf. Taxon 8: 248); the present voting is not decisive in either direction.

The additional note added to Prop. F to Art. 13 by the Committee at Montreal (para. 2 of item 2 of the Report) was closely correlated with the suggested change in Art. 32 — see (ii) above (Item 1 of the Report).

It may be remarked in this connection that Prop. L to Art. 7 (which was a general version dealing with the problem) has not been reported on by the Committee. Although it would seem that it does not command approval from either of the two opposing mycological views, it may serve as a basis until mycologists have made up their mind and have amended it (or not).

(iv) No preference for changing the starting-point of *Fungi imperfecti* was obtained, those who voted against forming a small majority (Item 3A of Report).

The change of the starting-point for *Hyphomycetes* (not to be confused with Hymenomycetes) found only little support. I venture to suggest that this may be because the group as such is difficult to circumscribe clearly for nomenclatorial purposes (Item 3B of Report).

(v) A few slight and obviously desirable textual emendations of Art. 59 were favourably received, viz. Props. A & B to Art. 59 and Item 4c of the Report. As to other alterations of the Article (Items 4a and 4b of the Report), it would seem that the voting hardly suggests further consideration of the matter involved in the preparation of the forthcoming edition of the Code.

(vi) The New Recommendation 73H ("Synopsis" p. 70; Item 5 of the Report) and the present wording of Art. 5, para. 3 (Item 6 of the Report) were unanimously favourably received.

(vii) Item 7 of the Report (living types) found a majority against it but may still need further consideration. However, I would point out that the Report speaks of "microscopic organisms" in general and that, therefore, in the present formulation, mycologists would seem not to be qualified to decide on the matter for the Code as a whole.

On the whole it may be said that highly controversial items are not supported by the combined committees and that the changes that are now proposed are of a technical nature. The controversial items may of course be taken up before and at the next Congress but for the present the report maintains the status quo.

The General Committee should now take a decision with regard to this new report. I propose to publish the report, together with this letter in Taxon in the usual way. Botanists will be invited to send their remarks to the undersigned before 1 February 1961. I suggest that the General Committee expresses itself before 1 March 1961 on the new report. Adoption of the report will result in referring it to the Editorial Committee.

The members of the General Committee are herewith invited to let me know before 1 December 1960 whether they agree with this procedure. No answer will be counted as agreement with the procedure. On 1 December I shall report to you again, and publish this letter and the report in Taxon. Utrecht, 6 October 1960.

Yours sincerely,
F. A. Stafleu

REPORT COMBINED COMMITTEES FOR FUNGI AND LICHENES

To the Secretary, General Committee on Botanical Nomenclature.

With reference to your letter of November 5, 1959, which you wrote to me in my capacity of Secretary of the Committee for Fungi and Lichens, and in which you requested a report of the combined Committees of 1954-1959 and 1959-1964 on the "Report of the Special Committee for Fungi and Lichenes" presented for discussion at the General Session of the Section for Nomenclature of the Ninth International Botanical Congress at Montreal, 1959, I herewith submit to you a summary of the outcome of the activities of the combined committees.

Enclosure 1 consists of the "Report of the Special Committee for Fungi and Lichens", Montreal, 1959, of which you wrote that "it was felt that a few of the items brought forward in it were of such great importance for mycology as a whole that it would be of advantage to consult many more mycologists before accepting them". This Report is not intelligible without having access to the "Synopsis of Proposals .... submitted to the Ninth International Botanical Congress Montreal — 1959" by J. Lanjouw.

On December 18, 1959, I dispatched a circular to all the members of the combined Committees in which they were requested to send in opinions on the Report before March 1, 1960. Enclosed were a copy of the Report and a copy of your letter to me of November 5, 1959.

Opinions were sent in by 10 members. A stencilled copy of all opinions that had come in was dispatched on May 7, 1960, together with a voting-form. It was requested that the votes be sent in before July 15, 1960. The total number of members of the combined committees is 30; the number of voting-forms received back is 15. The table making up Enclosure 2 shows the results.

It may be pointed out that the Report is silent on the decision of the Committee on Prop. A to Recommendation 50Dbis, see "Synopsis of Proposals" page 56 and as to

mail-vote, Taxon 8: 250. This omission was detected too late for action in conjunction with the voting on the Report. I have no authoritative information available on this matter as to its fate in Montreal.

As to the "Addendum" to the Report, I have pointed out to the Editorial Committee that this concerns a mere printing error rather than an omission, and that it should be rectified by the Editorial Committee.

October 6, 1960.

M. A. Donk, Secretary
Committee for Fungi and Lichenes

(*Enclosure 1*)

REPORT OF THE SPECIAL COMMITTEE FOR FUNGI AND LICHENES (MONTREAL 1959)

1. The Committee approves and recommends for adoption, the following provision (probably as an amendment to Art. 32, par. 1; but the placing is left to the Editorial Committee):
"Names of fungi are not validly published by references to descriptions published before the starting-point of the group concerned."

2. The Committee recommends the rejection of Proposal A to amend Article 13. The Committee approves and recommends for adoption Proposal F to amend Article 13, with the following additional note:
"A new combination the basionym of which was first published in a pre-starting-point work is considered as referring to the validated basionym even if there is no reference to the validating author."

3. The Committee approves and recommends for adoption the amendment to Article 13e offered as item 321 (page 84 of the Synopsis of Proposals), with the name "Fungi Imperfecti" substituted for "Hyphomycetes".

4. The Committee approves and recommends for adoption the following alterations in Article 59:
   a. After the word "Phycomycetes" the remainder of the first sentence to be deleted and the following to be inserted:
   ".... the correct name of all states is one typified by the perfect state; but otherwise, a name refers only to the state represented by its type. The legitimacy of a name or epithet typified by the perfect state is not affected by the earlier publication of any name or epithet typified by another state of the same taxon."
   b. The third sentence, "The type specimen .... stage", to be deleted.
   c. In the last sentence (2nd par.), "of the name of a perfect state" to be substituted for "a perfect state".
   The Committee aproves and recommends for adoption Proposal B for the amendment of this Article.

5. The Committee approves and recommends for adoption New Recommendation 73H.

6. The Committee finds that in Article 5, par. 3, the insertion of the word "infrageneric", after the Paris Congress, is a satisfactory answer to the question presented as Proposal A under this Article.

7. On behalf of the International Committee on Bacteriological Nomenclature the Special Committee for Fungi and Lichenes offers for the consideration of the Section on Nomenclature the following amendment to Article 10, par. 1, noting that the second sentence of Recommendation 8B implies that living material may be a type: In the third line substitute "cases" for "case"; and add the following sentence:
".... or for microscopic organisms, the type may consist of living cells so maintained that their characteristics are not altered."

   The Committee on Fungi considers this sentence so amended to constitute, in conjunction with all other applicable provisions of the Code for type specimens, a satisfactory description of a type culture. The attention of the Editorial Committee is called to the fact that as a consequence of Section 1 of this report the first example under Article 13, Proposal K, should be deleted.

   Addendum: The type species requested under Proposal H under Appendix III will be supplied when notes are available; it seems to have been lost by an error of transcription, somewhere.

Donald P. Rogers,
Secretary.

(*Enclosure 2*)

SUMMARY OF VOTING BY THE COMMITTEES FOR FUNGI AND LICHENES 1954-1959 AND 1959-1964 ON REPORT MONTREAL, 1959

Items of Report	yes	no	Annotations
1.	2	13	
2.	7	8	
3. A. (Fungi imperfecti)	6	9	see Note 1
B. (Hyphomycetes)	8	11	— — 1
4. Prop. A to Art. 59	11	1	see Note 2 & 3
Prop. B to Art. 59	13	0	— — 2
a.	4	10	
b.	3	11	
c.	12	2	
5.	14	0	
6.	14	0	
7.	4	8	

Note 1. One of the Members requested that the original proposal ("Hyphomycetes") and the one included in the Report ("Fungi imperfecti") should be separately dealt with. A stands for changing the starting-point of *Fungi imperfecti* in general; B for changing the starting-point of *Hyphomycetes* only. Votes on both A and B were asked for.

Note 2. One of the Members requested that the original proposals advanced in connection with Art. 59 included in the "Synopsis" be also taken into consideration; these are marked "Prop. A to Art. 59" and "Prop. B to Art. 59". Vote on all five parts, that is Prop. A, Prop. B, and a, b, and c of the Report were asked for.

Note 3. An additional 'no' was received with an accompanying remark "(pour ce qui concerne le texte français)".

NEWS AND NOTES

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the Life Sciences is January 15, 1961. Proposals received prior to that date will be reviewed at the spring meetings of the Foundation's advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the January 15, 1961 closing date will be reviewed following the summer closing date of May 15, 1961.

The next closing date for submission of proposals for specialized biological facilities is March 1, 1961. The NSF has two programs for support of facilities, one for general graduate level university laboratories and the other for specialized biological facilities. The latter are defined as discrete research installations which are unique, one-of-a-kind, or at least less than ordinary in that they are not a usual part of a university department and may represent either new ventures or the more traditional establishment.

Inquiries should be addressed to the National Science Foundation, Washington 25, D.C.

HIERACIOLOGISTS

Note that the name of our estonian collegue Albert Üksip, who has recently published a monograph of genus Hieracium in Flora SSSR, vol. 30 (1960), should be written *Üksap*, and not Juxip.

K. Thomasson

PERSONALIA

W. T. Stearn, of the Botany Department of the British Museum, Natural History, London, received an honorary doctor's degree at Leiden University on 11 November 1960.

Miss Alicia Lourteig will be absent from the Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris until March 1961. Her address will be Instituto Darwinion, San Isidro, Argentina.

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Karl Heinz Rechinger, Wien, Austria.
W. Gajewski, Warszawa, Poland.

Nomenclature Committees
see Taxon 8: 253 (1959).

I.A.P.T. MEMBERSHIP 1959

Angola

Instituto de Investigaçao Cientifica de Angola, Caixa Postal 3244, *Luanda* (1960).

Argentina

Instituto de Botánica Darwinion, San Isidro, B.A. (1959).

*

Boelcke, Ing. O., Av. Roque S. Pena 760, III, Buenos Aires (1952).
Buchinger, Dr M., C.C. 27 Sucursal 26, Buenos Aires (1957).
Burkart, Ing. A., Instituto de Botánica Darwinion, San Isidro (1952).
Cabrera, Dr A. L., Calle 62, no 723, La Plata, B.A. (1951).
Caro, J. A., Haedo Sud 1082, Córdoba (1956).
Hunziker, Ing. A. T., Casilla de Correo 23, Córdoba (1951).
Menendez, Dr C. A., Museo Argentino de Ciencias Naturales, Av. Angel Gallardo 470, Buenos Aires (PB) (1955).
Molfino, Prof. J. F., Instituto de Botánica y Farmacologia, Buenos Aires (1952).
Parodi, Ing. L. R., Lavalle 4680, Buenos Aires (1954).
Wright, J. E., Santa Rosa 391, Martínez, FCNGBM (1952).

Australia

Animal Industry Branch, P.O. Box 87, *Alice Springs,* N.T. (1954).
Botanic Museum and Herbarium, Botanic Gardens, *Brisbane,* Queensland (1955).
C.S.I.R.O., Land Research, Entomology and Plant Industry, *Canberra,* A.C.T. (1952).
National Herbarium of New South Wales, Botanic Gardens, *Sydney,* N.S.W. (1951).
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Ghana

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Great Britain

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Hungary

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Iceland

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India

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Iran

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Iraq

Polunin, Prof. N., Dept. of Botany, College of Arts and Sciences, Baghdad (1951).

Ireland

Walsh, Dr Th. J., Botanic Gardens, Glasnevin, Dublin (1951).
Webb, Prof. D. A., School of Botany, Trinity College, Dublin (1951).

Israël

Feinbrunn, Dr N., Hebrew University, Dept. of Botany, Jerusalem (1952).
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Italy

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Ivory Coast

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Jamaica

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Japan

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Jordan

Waldee, Dr E. L., U.S. Operations Mission to Jordan, American Embassy, Amman (1951).

Kenya

Greenway, Dr P. J., O.B.E., F.L.S., The East African Herbarium, P.O. Box 20209, Nairobi, Kenya Colony, E. Africa (1951).

Madagascar

Rakotoarivelo, H. J., Petit Séminaire, Tananarive (PB) (1960).

Malaya

Forest Research Institute, Kepong, Selangor (1953).

Keng, Dr H., Dept. of Botany, Univ. of Malaya, Singapore 10 (1960).

Marocco

Institut Scientifique Chérifien, Avenue Biarnay, *Rabat* (1951).

Sauvage, Ch., Institut Scientifique Chérifien, Rabat (1951).

Mauritius

Vaughan, Dr R. E., Phoenix (1953).

Mexico

Palacios Rincón, M. A., Instituto Botánico de Chiapas, l/a Avenida Sur no. 42, Apdo 24, Tuxtla Gutiérrez, Chiapas (1955).

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Monaco

Vatrican, L. F., Jardin Exotique, Boîte Postale 1, Monaco-Ville (1958).

Mozambique

Pedro, J. G., c/o Junta de Exportaçao do Algodão Colonial, P.O. Box 1073, Lourenço Marques, E. Africa (1951).

Netherlands

Centraal Bureau voor Schimmelcultures, Javalaan 20, *Baarn* (1959).

Rijksherbarium, Nonnensteeg 1, *Leiden* (1951).

Botanisch Museum en Herbarium, Lange Nieuwstraat 106, *Utrecht* (1951).

Laboratorium voor Plantensystematiek en -geographie, Gen. Foulkesweg 37, *Wageningen* (1955).

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Amshoff, Dr G. J. H., Utrechtsestraat 194, Oosterbeek (1951).

Andreas, Dr Ch. H., Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1951).

Bakhuizen van den Brink, Dr R. C., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Barkoudah, Y., Pelmolenplantsoen 4, Utrecht (1958).

Bergmans, J., Nic. v. Eschstraat 42, Oisterwijk (1952).

Beumée, Dr J. G. B., Edeseweg 72, Bennekom (1951).

Boom, Dr B. K., Prof. v. Uvenweg 298, Wageningen (1951).

Borssum Waalkes, J. van, Hofbrouckerlaan 36, Oegstgeest (1951).

Bremekamp, Prof. C. E. B., Ostadelaan 14, Bilthoven (1951).

Breteler, Ir F. J., Van Randwyckweg 19, Beek bij Nijmegen (1960).

Brouwer, Dr A., Garenmarkt 1, Leiden (PB) (1960).

Brummelen, J. van, Hyacinthenlaan 25, Haarlem (1959).

Buining, A. F. H., Burg. de Beaufortweg 10, Leusden (1958).

Dijkstra, S. J., Geol. Bureau v. h. Mijngebied, Akerstraat 88, Heerlen (PB) (1960).

Donk, Dr M. A., Wassenaarseweg 265, Den Haag (1952).

Florschütz, P. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Fuchs, Dr H. P., 1732 Laan v. Meerdervoort, Den Haag (1954).

Groenhart, P., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Hegnauer, Prof. R., Pharmaceutisch Laboratorium, Hugo de Grootstraat 32, Leiden (1957).

Heimans, Prof. J., Quinten Matsijsstraat 4, Amsterdam (1951).

Hekking, W. H. A., St. Annastraat 299, Nijmegen (1955).

Hoog, Th., "Zwanenburg", Koninginneweg 86, Haarlem (1955).

Hou, Dr D., Rijksherbarium, Nonnensteeg 1, Leiden (1955).

Janse, J. A., van Ittersumlaan 32, Bennebroek (1958).

Jonker, Prof. F. P., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Kalkman, C., Scholtenstraat 68, Leiden (1953).

Kern, J. H., Rijksherbarium, Nonnensteeg 1, Leiden (1952).

Koster, Dr J. Th., Warmonderweg 48, Oegstgeest (1951).

Kramer, Dr K. U., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1953).

Kruseman, Dr G., Zoölogisch Museum, Afd. Entomologie, Zeeburgerdijk 21, Amsterdam (1951).

Lam, Prof. H. J., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Lanjouw, Prof. J., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Leeuwenberg, Dr A. J. M., Laboratorium voor Plantensystematiek, Gen. Foulkesweg 37, Wageningen (1954).

Lindeman, Dr J. C., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Maas Geesteranus, Dr R. A., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Margadant, W. D., Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1954).

Mennega, Dr A. M. W., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

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Ooststroom, Dr S. J. van, Rijksherbarium, Nonnensteeg 1, Leiden (1952).

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Royen, Dr P. van, Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Sleumer, Dr H., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Soest, Prof. J. L. van, van Soutelandelaan 35, Den Haag (1951).

Stafleu, Dr F. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Steenis, Prof. C. G. G. J. van, Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Stoffers, Dr A. L., Botanisch Laboratorium, Driehuizerweg 200, Nijmegen (1951).

Stoutjesdijk, Dr P., Biologisch Station, Oostvoorne (1951).

Swart, Dr J. J., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Uitewaal, A. J. A., Alex. Boersstraat 25*huis*, Amsterdam (1958).

Verdoorn, Prof. F., Biohistorisch Instituut, Nieuwe Gracht 187, Utrecht (1951).
Vermeulen, Dr P., Wodanstraat 14, Amsterdam (1951).
Vroman, M., Rapenburgerstraat 128, Amsterdam-C. (1953).
Wagenaar Hummelinck, Dr P., Sweelincklaan 84, Bilthoven (1951).
Wit, Prof. H. C. D. de, Doorwerthsestraat 10, Heelsum (1951).
Wijk, Prof. R. v. d., Botanisch Laboratorium, afd. Plantensystematiek, Grote Rozenstraat 31, Groningen (1951).
Zanten, Dr B. O. van, Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1959).

New Guinea (Austr.)

Womersley, J. S., Department of Forests, Lae (1953).

New Zealand

The Librarian, Dominion Museum, Wellington (1959).

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Cooper, R. C., Auckland Museum, P.O. Box 9027, Newmarket, Auckland (1951).
Hamlin, B. G., Dominion Museum, Private Bag, Wellington (1957).
Moar, N. T., Botany Division, D.S.I.R., Christchurch (PB) (1960).
Moore, Miss L. B., 9 Hadfield Terrace, Wellington W. 1 (1954).
Stoneley, Mrs H. M. M., c/o BP-Shell & Todd Co. Ltd., "Braeburn", 65 Wainui Road, Gisborne, North Island (PB) (1956).
Zotov, V. D., Botany Division, D.S.I.R., P.O. Box 2015, Christchurch (1953).

Nigeria

Forest Research, Ibadan (1952).

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Hopkins, B., B.Sc., Ph.D., Dept. of Botany, University College, Ibadan (1956).
Keay, R. W. J., M.A., F.L.S., Federal Department of Forest Research, Ibadan (1952).

Norway

Universitetets Botaniske Museum, Trondheimsveien 23a, *Oslo* 45 (1951).

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Eckblad, F. E., University Botanical Garden, Trondheimsveien 23b, Oslo (1957).
Faegri, Prof. K., Botanisk Museum, Bergen (1951).
Gjaerevoll, O., Dept. of Botany, Museum of the Royal Norwegian Society for Science and Letters, Trondheim (1951).
Hagen, A., Løvenskioldsgt. 4, Oslo (1951).
Hoeg, Prof. O. A., Universitetets farmasoitiske Institut, Oslo-Blindern (1953).
Lid, J., Botanisk Museum, Oslo 45 (1951).
Manum, S., Institutt for Geologi, Universitetet, Blindern, Oslo (PB) (1960).
Rønning, Dr O. I., Tromsø Museum, Tromsø (1953).
Thorsrud, Dr A., Institut for Blomsterdyrkning, Vollebekk (1957).
Wendelbo, P., Botanisk Museum, Bergen (1956).

Pakistan

Ali, Dr S. I., 2D, 14/3, Nazimabad, Karachi (1957).
Hossain, Dr M., c/o The Department of Botany, Dacca University, Dacca (1959).

Peru

Museo de Historia Natural "Javier Prado", Avenida Arenales 1256, Lima (1951).

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Soukup, J., Box 999, Lima (1955).

Philippines

Bardenas, Dr E. A., Dept. of Botany, College of Agriculture, University of the Philippines College, Laguna (1960).
Mendoza, D. R., Director, National Museum, Manila (1959).
Pancho, J. V., Department of Agricultural Botany, Central Experiment Station, University of the Philippines College, Laguna (1959).
Quisumbing, Dr E., National Museum, Herran & Taft Avenue Sts., Manila (1951).
Santos, Dr J. V., Dept. of Botany, College of Liberal Arts, University of the Philippines, Quezon City (1952).
Steiner, Dr M. L., 419 Park Avenue, Pasay (1953).
Velasquez, G. T., Dept. of Botany, University of the Philippines, Diliman, Rizal (1957).

Poland

Institutum Botanicum, Academiae Scientiarum Polonae, Lubicz 46, *Kraków* (1957).

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Gajewski, Prof. W., Botanical Garden, Warszawa (1960).
Pawlowski, Prof. B., Lobrowska 59, Kraków (1957).

Portugal

Jardim e Museu Agricola do Ultramar, Calçada do Galvão, *Belém-Lisboa* (1952).

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Amaral Franco, Prof. J. M. A. P. do, 82 Rua Presidente Arriaga, Lisboa (1951).

Carvalho e Vasconcellos, Prof. J. de, Instituto Superior de Agronômia, Lisboa (1951).

Fernandes, Prof. A., Instituto Botânico da Universidade de Coimbra, Coimbra (1951).

Malato Beliz, J., Laboratório de Botânica, Estação de Melhoramento de Plantas, Elvas (1951).

Pinto da Silva, A. R., Estação Agronômica Nacional, Sacavem (1951).

Tavares, Dr C. N., Instituto Botânico, Faculdade de Ciencias, Lisboa (1951).

Singapore

Dept. of Botany, University of Malaya, Cluny Road, *Singapore 10* (1951).

Botanic Gardens, Singapore 10 (1957).

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S. Rhodesia

Federal Herbarium, Branch of Botany and Plant Pathology, Federal Ministry of Agriculture, P.O. Box 8100, Causeway, *Salisbury* (1959).

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Greatrex, F. C., 8 Queen's Gate Hats, Baines Avenue & Fifth Street, Causeway, Salisbury (1955).

Roan, H. M., P.O. Box 287, Bulawayo (1959).

Wild, Dr H., Branch of Botany and Plant Pathology, Federal Ministry of Agriculture, P.O. Box 8100, Causeway, Salisbury (1952).

Spain

Instituto Antonio José Cavanilles, Plaza Murillo 2, *Madrid* (1953).

Instituto Forestal de Investigaciones y Experiencias, Apartado de Correos 8.111, *Madrid* (1956).

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Bolós, Prof. A. de, Instituto Botánico de Barcelona, Parque de Montjuic, Barcelona (1951).

Fernandez Galiano, Prof. D., Av. de los Toreros, 67, 2°-izq., Madrid (1958).

Guinea, Prof. E., Ayala 73, Madrid (1951).

Lainz, Dr M., Universidad Laboral, Gijón (1953).

Menéndez Amor, Miss J., Instituto José de Acosta, Museo Nacional de Ciencias Naturales, Laboratorio de Palinologia, P.° de la Castellana 84, Madrid (1957).

Panella Bonastre, J., Constitucion 155, Barcelona (1958).

Riviere de Caralt, F., 58 Ronda San Pedro, Barcelona (1958).

Sudan

Beshir, B., Gezira Research Farm, Wad Medani (1957).

MacLeay, Dr K. N. G., Gordon Memorial College, P.O. Box 321, Khartoum (1953).

Sweden

Botaniska Trädgården, Göteborg (1951).

Botaniska Museet, Lund (1951).

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Institutionen för Systematisk Botanik, Uppsala I (1960).

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Ahler, Dr S., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1951).

Almhorn, Dr O., Botaniska Museet, Lund (1951).

Almestrand, Dr A., Institute of Systematic Botany, Lund (1957).

Andersson, O., Drottninggatan 9, Karlskrona (1952).

Asplund, Prof. E., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1952).

Dahlgren, R., Botaniska Museet, Lund (1956).

Degelius, Dr G., Botaniska Trädgården, Göteborg C (1952).

Du Rietz, Prof. G. E., Växtbiologiska Institutionen, Villavägan 14, Uppsala 8 (1954).

Erdtman, Prof. G., Palynological Laboratory, Nybodagatan 5, Stockholm-Solna (PB) (1951).

Florin, Prof. R., Bergianska Trädgården, Stockholm 50 (PB) (1951).

Fries, Prof. R. E., Floragatan 3, Stockholm (1951).

Harling, Dr G., Bergianska Trädgården, Stockholm 50 (1952).

Hässler, A., Ö. Vallgatan 39, Lund (1951).

Hedberg, Dr K. O., Botaniska Museet, Uppsala 1 (1952).

Hjelmqvist, Dr H., Botaniska Museet, Lund (1951).

Holm, L., Botaniska Museet, Uppsala 1 (1951.)

Horn af Rantzien, H., Geological Department, University of Stockholm, Kungstensgatan 45, Stockholm Va. (PB) (1951).
Hylander, N., Botaniska Museet, Uppsala 1 (1951).
Larsson, B. M. P., Institute of Plant Ecology, University of Uppsala, Villavägen 14, Uppsala (1959).
Lövkvist, Dr B., Cytotaxonomical Laboratory, Botanical Institute, Lund (1960).
Lundblad, Dr B., Geologiska institutionen, Stockholms Högskola, Kungstensgatan 45, Stockholm Va. (PB) (1951).
Lundqvist, N., Universitetes Institutionen för Systematisk Botanik, Uppsala 1 (1960).
Mårtensson, Dr O., Trädgårdsgatan 10, Uppsala (1959).
Mattisson, K. H., S. Kronoborgsvägen 10A, Malmö (1951).
Nannfeldt, Prof. J. A., Botaniska Museet, Uppsala 1 (1951).
Norlindh, Dr T., Botaniska Museet, Lund (1951).
Nyholm, Mrs E., Institute of Systematic Botany, Lund (1960).
Peterson, B. H., Botaniska Trädgården, Göteborg SV. (1951).
Pettersson, B., Adelsgatan 2, Visby (1951).
Runemark, Dr H., Botaniska Museet, Lund (1952).
Santesson, Dr R., Institute of Systematic Botany, Uppsala (1951).
Segelberg, Prof. I., Stenungsundsgatan 20, Göteborg (1958).
Selling, Prof. O. H., Palaeobotaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (PB) (1955).
Skottsberg, Prof. C., Apotekaregatan 8, Göteborg (1951).
Weimarck, Prof. H., Botaniska Museet, Lund (1951).
Willén, T., Institute of Systematic Botany, P.O. Box 123, Uppsala (1960).

Switzerland

Botanische Anstalt der Universität Basel, Schönbeinstrasse 16, *Basel* (1960).
Institut et Jardin botaniques de l'Université, Altenbergrain 21, *Bern* (1951).
Nomenklaturkommission des Schweizerischen Gartenbaues, Münsingen - Bern (1953).
Conservatoire botanique de la Ville de Genève, 192 Route de Lausanne, *Genève* (1951).
Musée de Botanique, Palais de Rumine, *Lausanne* (1951).
Botanischer Garten und Bot. Museum der Universität Zürich, Pelikanstrasse 40, *Zürich* (1952).
Aellen, P., Mittlere Strasse 139, Basel (1951).
Baehni, Prof. Ch., Conservatoire Botanique, 192 Route de Lausanne, Genève (1951).
Buchmann-Felber, H. E., Sunnehalde, Feldmeilen (1958).
Daepp, H. P., Münsingen - Bern (1951).
Eichenberger, Dr E., Dorstrasse 194, Meilen (1958).
Huber-Morath, Dr A., Salinenstrasse 17, Basel (1952).
Huysman, H. S. C., 23, Rue de Pommeret, Cernier (Ne.) (1957).
Krainz, H., Mythenquai 88, Zürich 2 (1958).
Markgraf, Prof. Dr F., Botanischer Garten und Botanisches Museum der Universität Zürich, Pelikanstrasse 40, Zürich (1951).
Maurizio, Dr A., Eidg. Versuchsanstalt, Bienenabteilung, Liebefeld/Bern (1951).
Moll, H. G., Gartendörfli, Gotenbach, Sihltal-Zürich (1958).

Thailand

Botanical Section, Department of Agriculture, Bangkok (1953).

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Suvarnasuddhi, K., Forest Products Research Division, Royal Forest Dept., Bangkok (1951).

Tunisia

Pottier-Alapetite, Mme, Institut des Hautes Etudes, 8 Rue de Rome, Tunis (1958).

Turkey

Demiriz, Dr H., Universitat Istanbul, Institut für Pharmazeutische Botanik und Genetik, Süleymaniye, Istanbul (1956).

Uganda

Lind, Dr E. M., Makerere College, The University College of East Africa, P.O. Box 262, Kampala (1959).

Union of South Africa

The Bolus Herbarium, University of Cape Town, Rondebosch, Cape Town (1952).
The Moss Herbarium, Dept. of Botany, University of the Witwatersrand, Johannesburg (1952).
National Botanic Gardens, Kirstenbosch, Newlands, C.P. (1958).
The Bews Botanical Laboratory, University of Natal, P.O. Box 375, *Pietermaritzburg* (1953).
Division of Botany and Plant Pathology, National Herbarium, P.O. Box 994, *Pretoria* (1951).
Departement van Plantkunde, Universiteit van Stellenbosch, Stellenbosch (1953).

Adamson, Prof. R. S., Morton, Lochiel Road, Rondebosch (temporarily c/o Dept. of Botany, British Museum (Natural History), London, S.W. 7 - Great Britain) (1951).

Dyer, Dr R. A., P.O. Box 994, Pretoria (1954).

Killick, D. J. B., Department of Botany, P.O. Box 994, Pretoria (1954).

Levyns, Mrs M. R., Dept. of Botany, University of Cape Town, Rondebosch (1951).

Pocock, Dr M. A., 18 Milner Street, Grahamstown, C.P. (1954).

Reynolds, Dr G. W., P.O. Box 2097, Johannesburg (1955).

Weintroub, D., Transvaal Chamber of Mines, P.O. Box 809, Johannesburg (1952).

Zinderen-Bakker, Dr E. M. van, Universiteits O.V.S., Bloemfontein (1960).

United States

University of New Mexico Library, Albuquerque, N. Mex. (1955).

The Herbarium, Dept. of Botany, Iowa State College, *Ames*, Iowa (1952).

University of Georgia Libraries, Acquisitions Division, Athens, Ga. (1958).

The University of Texas Library, Austin 12, Tex. (1955).

Louisiana State University, Library, Serials Division, *Baton Rouge 3*, La. (1952).

Indiana University, College of Arts and Sciences, Department of Botany, *Bloomington*, Ind. (1953).

Brooklyn Botanic Garden, 1000 Washington Avenue, *Brooklyn 25*, N.Y. (1952).

Gray Herbarium, Harvard University, 22 Divinity Avenue, *Cambridge 38*, Mass. (1952).

Farlow Herbarium and Library, 20 Divinity Avenue, *Cambridge 38*, Mass. (1957).

Serials Department, University of North Carolina Library, Chapel Hill, N.C. (1956).

Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, *Chicago 5*, Ill. (1952).

Rancho Santa Ana Botanic Garden, 1500 North College Ave., *Claremont*, Calif. (1951).

Dept. of Botany, Ohio State University, Rm. 102 B & Z. Bldg., *Columbus 10*, Ohio (1957).

Herbarium of Southern Methodist University, Dallas 5, Tex. (1951).

Michigan State University, Dept. of Botany and Plant Pathology, *East Lansing*, Mich. (1952).

Dept. of Biology, Kansas State Teachers College, Emporia, Kan. (1957).

University of Hawaii Library, Honolulu 14, Hawaii (1952).

Shell Development Company, 3737 Bellaire Blvd., *Houston 25*, Tex. (1958).

State University of Iowa, Dept. of Botany, *Iowa City*, Iowa (1951).

Bailey Hortorium, Sage Place, *Ithaca*, N.Y. (1951).

Longwood Gardens, Education Department, Kennett Square, Pa. (1957).

Traub Herbarium, American Plant Life Society, *La Jolla*, Calif. (1955).

Agricultural Library, University of California, Los Angeles 24, Calif. (1960).

Kansas State University Library, Manhattan, Kan. (1959).

Joint University Libraries, Nashville 5, Tenn. (1960).

Southern Forest Experiment Station, 704 Lowich Bldg., 2020 St. Charles Ave., *New Orleans 13*, La. (1960).

New York Botanical Garden, Bronx Park, *New York 58*, N.Y. (1951).

The Rachel McMasters Miller Hunt Botanical Library, Carnegie Institute of Technology, *Pittsburgh 13*, Pa. (1960).

Texas Research Foundation, P.O. Box 43, *Renner*, Tex. (1952).

The Library, University of California, Riverside, Calif. (1958).

California Academy of Sciences Library, Golden Gate Park, *San Francisco 18*, Calif. (1951).

Missouri Botanical Garden, 2315 Tower Grove Avenue, *St Louis 10*, Mo. (1955).

Jersey Production Research Company, 1133 North Lewis Avenue, *Tulsa 10*, Okla. (1959).

Dept. of Botany, U.S. National Museum, Smithsonian Institution, *Washington*, D.C. (1955).

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Abbott, Mrs M. Langford, Dept. Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Adams, W. P., Division of Botany, Florida State University, Tallahassee, Fla. (1957).

Ahmadjian, Prof. V., Department of Biology, Clark University, Worcester, Mass. (1959).

Allen, Dr C. K., The New York Botanical Garden, Bronx Park, New York 58, N.Y. (1951).

Allen, Dr O. N., 212-A Bacteriology Bldg., University of Wisconsin, Madison 6, Wisc. (1951).

Almodovar, L. R., Institute of Marine Biology, University of Puerto Rico, Mayaguez, Puerto Rico (1958).

Anderson, Dr D. E., Botany Dept., Iowa State University, Ames, Iowa (1959).

Anderson, J. M. F., Jr., Arkansas State College, Box 162, State College, Arkansas (1951).

Anderson, L. E., Dept. of Botany, Duke University, Durham, N.C. (1957).

Andrews, Dr H. N., Botany School, Washington University, St Louis 5, Mo. (PB) (1955).

Archer, Dr W. A., 4317 Rowalt Drive, College Park, Md. (1952).

Argus, G. W., Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1959).

Arnold, Dr Ch. A., Division of Botany, University of Michigan, Ann Arbor, Mich. (1955).

Axelrod, Dr D. I., Dept. of Geology, University of California, Los Angeles 24, Cal. (PB) (1955).

Bache-Wiig, Dr S., Dept. of Botany, Burton Hall, Smith College, Northampton, Mass. (1952).

Bacigalupi, Dr R., Jepson Herbarium, Dept. of Botany, University of California, Berkeley 4, Cal. (1951).

Baker, G. R., Dept. of Botany, University of Minnesota, Minneapolis 14, Minnesota (1958).

Baker, Dr W. H., Dept. of Biol. Sci., University of Idaho, Moscow, Idaho (1952).

Baldwin, Dr J. T., Jr., Box 1588, Williamsburg, Va. (1952).

Banks, Prof. H. P., Dept. of Botany, Cornell University, Ithaca, N.Y. (PB) (1955).

Barghoorn, Prof. E. S., Harvard University, Biological Laboratories, Cambridge 38, Mass. (PB) (1955).

Barkley, F. A., 34 Elm Street, Morristown, N.J. (1959).

Barneby, R. C., Stirling House, Greenport, L.I., N.Y. (1951).

Baxter, R. W., Dept. of Botany, University of Kansas, Lawrence, Kansas (PB) (1955).

Beal, E. O., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1958).

Beaman, Dr J. H., Dept. of Botany & Plant Pathology, Michigan State University, East Lansing, Mich. (1953).

Beard, Dr H., Dept. of Botany, University of California, Berkeley 4, Cal. (1952).

Bell, C. R., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1956).

Benjamin, C. R., National Fungus Collections, Plant Industry Station, Beltsville, Md. (1958).

Benninghoff, W. S., University of Michigan, Dept. of Botany, Ann Arbor, Mich. (PB) (1958).

Benson, Prof. L., Dept. of Botany, Pomona College, Claremont, Cal. (1951).

Berry, Dr E. W., College Station, Durham, N.C. (PB) (1955).

Beyer, Dr A. F., Midwestern University, Box 1, Wichita Falls, Texas (PB) (1955).

Bigelow, Mrs H. E., Dept. of Botany, University of Massachusetts, Amherst, Mass. (1956).

Birdsey, Dr M. R., Dept. of Botany, University of Miami, Coral Gables 46, Fla. (1955).

Blakley, E. R., Santa Barbara Botanic Garden, Santa Barbara, Cal. (1951).

Blasdell, R. F., Division of Sciences, Louisiana State University in New Orleans, Lake Front, New Orleans 22, La. (1956).

Bodman, Sister M. C., 1020 West Sheridan Road, Mundelein College, Chicago 40, Ill. (1951).

Bogle, A. L., Dept. of Botany, University of Minnesota, Minneapolis 14, Minnesota (1960).

Booth, Prof. W. E., Dept. of Botany and Bacteriology, Montana State College, Bozeman, Mont. (1951).

Bowerman, Miss M. L., University of California Herbarium, Berkeley 4, Cal. (1952).

Breen, Mrs R. S., 1806 Croydon Drive, Tallahassee, Fla. (1959).

Breitung, A. J., 1416 So. Glendale Ave., Apt. 6, Glendale 5, Cal. (1957).

Brown, Dr C. A., 1180 Stanford Avenue, Baton Rouge 15, La. (1951).

Brown, Dr D. F. M., Dept. of Biology, Eastern Michigan College, Ypsalanti, Mich. (1954).

Brown, J. R., 132 W. Union Street, Pasadena 1, Cal. (1959).

Brown, R. M., 203 Morning Sun Avenue, Cottage 4, Mill Valley, Cal. (1958).

Bryan, Dr E. H., Jr., Bernice P. Bishop Museum, Honolulu 17, Hawaii (1951).

Buchanan, R. E., Iowa State College, Room 316, Curtiss Hall, Ames, Iowa (1951).

Cahoon, Miss E. J., Botany Department, University of Minnesota, Minneapolis 14, Minn. (PB) (1960).

Camp, Dr W. H., Dept. of Botany, University of Connecticut, Storrs, Conn. (1951).

Canright, Dr J. E., Dept. of Botany, Indiana University, Bloomington, Ind. (PB) (1955).

Chambers, Dr K. L., Dept. of Botany, Oregon State College, Corvallis, Ore. (1954).

Channell, Dr R. B., Dept. of Biology, Vanderbilt University, Nashville 5, Tenn. (1954).

Charette, L. A., 27 Ferguson Avenue, Burlington, Vt. (1953).

Chase, Mrs A., United States National Museum, Smithsonian Institution, Washington 25, D.C. (1952).

Chi Ling Chen, Yale University, Medical School, New Haven, Conn. (1957).

Clark, R. B., Rutgers University, New Brunswick, N.J. (1951).

Clausen, Dr R. T., Dept. of Botany, Cornell University, Ithaca, N.Y. (1951).

Clayton, T., 3700 White Bear Ave., White Bear 10, Minn. (1954).

Clevenger, Dr S., 717 South Henderson Street, Bloomington, Ind. (1959).

Clewell, A. F., Dept. of Botany, Indiana University, Bloomington, Ind. (1960).

Cobb, B., 25 East End Avenue, New York, N.Y. (1954).

Cohn, J., 1010 Parkside Drive, Oak Lane Manor, Wilmington 3, Delaware (1953).

Collins, Dr D. C., Suite n. 503, 7046 Hollywood Boulevard, Hollywood 28, Cal. (1951).

Collins, Dr H. R., Ohio Division of Geological Surveys, 155 South Oval Dr., Columbus 10, Ohio (PB) (1959).

Conklin, Prof. H. C., Columbia University in the City of New York, Dept. of Anthropology, New York 27, N.Y. (1958).

Conrade Head, Dr S., Pan American Petroleum Corporation, Research Center, P.O. Box 591, Tulsa, Okla. (1957).

Constance, Dr L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Cooke, W. M. Bridge, 1135 Wilshire Avenue, Cincinnati 30, Ohio (1951).

Cooley, G. R., Chinsegut Hill, Rt. 2, Box 216, Brooksville, Fla. (1956).

Cooperrider, T. S., Dept. of Biology, Kent State University, Kent, Ohio (1958).

Core, Dr E. L., Dept. of Biology, West Virginia University, Morgantown, W.Va. (1955).

Correll, Dr D. S., Texas Research Foundation, Renner, Tex. (1951).

Couch, Dr J. N., University of North Carolina, Chapel Hill, N.C. (1959).

Cowan, Dr R. S., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1951).

Cridland, A. A., Dept. of Botany, Kansas University, Lawrence, Kans. (PB) (1958).

Cronquist, Dr A., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1954).

Cross, Dr A. T., Pan American Petroleum Corp., Research Center, P.O. Box 591, Tulsa 2, Okla. (PB) (1955).

Cuatrecasas, Dr J., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1951).

Culberson, Dr W. L., Dept. of Botany, Duke University, Durham, N.C. (1952).

Cull, Miss Irene, 200 Dixon Avenue, Peoria, Ill. (1951).

Dahl, Prof. A. Orville, Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1952).

Daily, W. A., Dept. of Botany, Butler University, Indianapolis 7, Ind. (1956).

Daoud, H. S., Dept. of Botany, Duke University, Durham, N.C. (1958).

Darrah, W. C., Spruce Hill, R.D.I., Gettysburg, Pa. (PB) (1960).

Daugherty, L. H., San Jose State College, San Jose 14, Cal. (PB) (1960).

Davidson, R. A., 203 East Locust Street, Davenport, Iowa (1957).

Dawson, E. Yale, Box 228, R.F.D. 1, Solvang, Cal. (1952).

Degener, Dr O., Waialua, Oahu, Hawaii (1959).

Delevoryas, Th., Dept. of Plant Science, Yale University, New Haven, Conn. (PB) (1955).

Denham, D. L., Dept. of Botany, University of Colorado Museum, Boulder, Colo. (1960).

Denison, Dr W. C., Dept. of Botany, Swarthmore College, Swarthmore, Pa. (1956).

DePoe, C. E., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1959).

Diehl, Dr W. W., 1512 N. McKinley Road, Arlington 5, Va. (1951).

Dodge, Dr C. W., Henry Shaw School of Botany, Washington University, St Louis 5, Mo. (1951).

Dorf, Prof. E., Dept. of Geology, Princeton University, Princeton, N.J. (PB) (1955).

Dress, Dr W. J., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1958).

Dressler, R. L., Missouri Botanical Garden, 2315 Tower Grove Avenue, St Louis 10, Mo. (1953).

Drouet, Dr F., Dept. of Botany, University of Arizona, Tucson, Arizona (1953).

Duman, Rev. Dr M. G., Catholic University of America, Washington 17, D.C. (1951).

Duncan, Dr W. H., Dept. of Botany, University of Georgia, Athens, Ga. (1952).

Dunn, Dr D. B., Dept. of Botany, University of Missouri, Columbia, Mo. (1954).

Earle, Dr W. H., Desert Botanical Garden of Arizona, Tempe, Ariz. (1951).

Easterly, Dr N. W., Dept. of Biology, Bowling Green State University, Bowling Green, Ohio (1959).

Ebinger, J. E., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1958).

Eggert, D. A., Dept. of Botany, Yale University, New Haven, Conn. (1958).

Ehrle, E. B., State University Teachers College, Geneseo, N.Y. (1956).

Elias, M. K., University of Nebraska, Conservation & Supply Division, room 108 Nebraska Hall, Lincoln 8, Neb. (PB) (1955).

Ellis, Dr J. J., Northern Utilization Research and Development Division, A.R.S., U.S. Dept. of Agriculture, 1815 North University Street, Peoria, Ill. (1960).

Engelhardt, D. W., Dept. of Botany, Indiana University, Bloomington, Ind. (PB) (1960).

Erbisch, F. H., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Evitt, W. R., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Ewan, Prof. J., Tulane University, New Orleans 18, La. (1952).

Faruqi, S. A., Dept. of Botany and Plant Pathology, Oklahoma State University, Stillwater, Okla. (1959).

Fay, M. J., Dept. of Botany, Wisconsin State College, Eau Claire, Wisc. (1952).

Felix, C. J., Sun Oil Company, 503 N. Central Expressway, Richardson, Texas (PB) (1959).

Ferris, Mrs R. S., Dudley Herbarium, Natural History Museum, Stanford University, Stanford, Cal. (1951).

Fetters, Th. W., Botany Department, Indiana University, Bloomington, Ind. (PB) (1960).

Fisher, Dr T. R., Botany Dept., Ohio State University, Columbus 10, Ohio (1959).

Flowers, Prof. S., Dept. of Botany, University of Utah, Salt Lake City 1, Utah (1952).

Fogg, Dr J. M., Jr., Morris Arboretum, University of Pennsylvania, 9419 Meadowbrook Avenue, Philadelphia 18, Pa. (1959).

Fosberg, Dr F. R., 212 Holmes Run Road, Falls Church, Va. (1951).

Fulford, Dr M., Dept. of Botany, University of Cincinnati, Cincinnati 21, Ohio (1951).

Fuller, A. M., Dept. of Botany, Milwaukee Public Museum, Milwaukee 3, Wisc. (1952).

Funkhouser, J. W., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Garay, L. A., Oakes Ames Orchid Herbarium, 22 Divinity Ave., Cambridge 38, Mass. (1958)

Gier, L. J., Dept. of Biology, William Jewell College, Liberty, Mo. (1951).

Gilkey, Dr H. M., 136 N. 30th Street, Corvallis, Ore. (1951).

Gillespie, W. H., Dept. of Botany, West Virginia University, Morgantown, W.Va. (1958).

Gillet, G. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1957).

Gillis, W. T., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Godfrey, Dr R. K., Dept. of Botany, Florida State University, Tallahassee, Fla. (1955).

Goodman, Dr G. J., Dept. of Plant Sciences, University of Oklahoma, Norman, Okla. (1951).

Gordon, Dr R. B., Darlington Herbarium, State Teachers College, West Chester, Pa. (1952).

Gould, S. W., Thunder Mill, Opening Hill Road, Madison, Conn. (1957).

Grant, M. L., Iowa State Teachers College, Cedar Falls, Iowa (1951).

Grassl, Dr C. O., Box 156, Canal Point, Fla. (1959).

Gray, Dr J., Geochronology Laboratories, University of Arizona, Tucson, Arizona (PB) (1958).

Gray, N. E., Anatomy Building, Emory University, Atlanta, Ga. (1959).

Grayson, Dr J. F., Magnolia Petroleum Company, Field Research Laboratory, Box 900, Dallas 21, Texas (PB) (1959).

Griffiths, A. Jr., 422 West South Street, Anaheim, Cal. (1954).

Guennel, G. K., Dept. of Conservation, Geological Survey, Indiana University, Bloomington, Ind. (PB) (1955).

Haas, Dr Th. Ph., Philadelphia College of Pharmacy and Science, Philadelphia 4, Pa. (1952).

Hale, M. E., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1959).

Hall, Dr J. W., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (PB) (1956).

Hall, Dr M. T., Dept. of Botany, Butler University, Indianapolis, Ind. (1951).

Hanlin, Dr R. T., Dept. of Plant Pathology, Georgia Experiment Station, Experiment, Ga. (1959).

Hardin, Dr J. W., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1951).

Harthill, M. P., 913 E 5th., Pt. Angeles, Wash. (1960).

Harvey, Mrs D. R., 5801 Adelaide Ave., San Diego 15, Cal. (1952).

Harvey, Dr L. H., The Herbarium, Montana State University, Missoula, Mont. (1954).

Hatcher, R. E., Dept. of Botany, University of Cincinnati, Cincinnati 21, Ohio (1957).

Hauke, R. L., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1958).

Heckard, L. R., Dept. of Botany, University of California, Berkeley 4, Calif. (1955).

Heiser, Ch. B. Jr., Dept. of Botany, Indiana University, Bloomington, Ind. (1951).

Hendricks, A. J., Dept. of Botany, Southern Illinois University, Carbondale, Ill. (1957).

Henry, Dr L. K., Carnegie Museum, Pittsburg 13, Pa. (1951).

Hermann, Dr F. J., Division of Plant Exploration, Plant Industry Station, Beltsville, Md. (1951).

Hilferty, F. J., Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1959).

Hille, F. K., 410 Rose Lane, Lexington, Ky. (1959).

Hiltunen, J., Dept. of Biology, Wayne State University, Detroit 2, Mich. (1958).

Hocking, Dr G. M., Auburn University, Auburn, Ala. (1954).

Hodge, Dr W. H., Longwood Gardens, Kennett Square, Pa. (1952).

Hoffmeister, W. S., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Hollensen, R. H., Dept. of Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Holm, Dr R. W., Dudley Herbarium, Natural History Museum, Stanford, Cal. (1951).

Houk, R. D., Department of Biological Science, Florida State University, Tallahassee, Fla. (1960).

Howard, Dr G. E., Dept. of Botany, University of Washington, Seattle 5, Wash. (1951).

Howard, Dr R. A., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1955).

Howell, Dr J. Th., California Academy of Sciences, Golden Gate Park, San Francisco 18, Cal. (1951).

Hu, Dr S., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Hulbert, L. C., Dept. of Botany, Kansas State College, Manhattan, Kansas (1956).

Hurst, Dr F. M., Baylor University, Waco, Texas (1959).

Hutchinson, P. C., Botanical Garden, University of California, Berkeley 4, Cal. (1952).

Huttleston, D. G., Longwood Gardens, Kennett Square, Pa. (1951).

Hyypio, P. A., Botanical Gardens, University of Michigan, Ann Arbor, Mich. (1953).

Iltis, H., Herbarium, Dept. of Botany, University of Wisconsin, Birge Hall, Madison, Wisc. (1951).

Ingram, J., L.H. Bailey Hortorium, Cornell University, Ithaca, N.Y. (1959).

Irwin, H. S., Dept. of Botany, University of Texas, Austin 12, Tex. (1957).

Isely, D., Dept. of Botany, Iowa State College, Ames, Iowa (1951).

Jackson, Dr R. C., Dept. of Botany, The University of Kansas, Lawrence, Kansas (1955).

Jahlonski, Dr E., Apt. A. 52 — Hudson View Gardens, 183rd Street and Pinehurst Avenue, New York 33, N.Y. (1958).

James, Dr Ch. W., Dept. of Botany, University of Georgia, Athens, Ga. (1956).

Jervis, R. N., Dept. of Biology, East Texas State College, Commerce, Tex. (1953).

Johnston, Dr I. M., Arnold Arboretum, Jamaica Plain 30, Mass. (1951) (†).

Johnston, Prof. M. C., Dept. of Botany, University of Texas, Austin 12, Texas (1955).

Jones, Dr G. Neville, University of Illinois, Dept. of Botany, Urbana, Ill. (1952).

Kapadia, Dr Z. J., Dept. of Range and Forestry, Agricultural & Mechanical College of Texas, College Station, Texas (1956).

Keck, Dr D. D., National Science Foundation, Washington 25, D.C. (1951).

Keefe, Rev. A. M., St Norbert College, West De Pere, Wisc. (1951).

Kiem, Stanley C., Fairchild Tropical Gardens, 10901 Old Cutler Road, Miami 56, Fla. (1958).

Kiener, Dr W., 1242 Pawnee Street, Lincoln 2, Neb. (1951).

Kimnach, Mrs M., 5918 Jordan Avenue, El Cerrito 9, Cal. (1957).

Knobloch, I. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1959).

Kobuski, Dr C. E., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Koch, Dr L. F., 1212 Garden Hills Drive, Champaign, Ill. (1951).

Koeppen, R., Forest Products Laboratory, Madison 5, Wisconsin (1959).

Korf, Dr R. P., Dept. of Plant Pathology, New York State College of Agriculture, Cornell University, Ithaca, N.Y. (1951).

Kral, R., Herbarium, c/o Dept. of Biology, Florida State University, Tallahassee, Fla. (1958).

Kruckeberg, Dr A. R., Dept. of Botany, University of Washington, Seattle 5, Wash. (1955).

Krukoff, B. A., Merck & Co. Inc., 100 Church Street, New York 7, N.Y. (1951).

Kucera, Dr C. L., Dept. of Botany, University of Missouri, Columbia, Mo. (1952).

Lakela, Prof. O., University of South Florida, Tampa, Fla. (1952).

Lane, Dr I. E., Dept. of Botany, University of Hawaii, Honolulu 14, Hawaii (1952).

Langman, Mrs I. K., 3509 Baring Street, Philadelphia 4, Pa. (1953).

Latimer, I. S., Jr., Geological & Economic Survey, Morgantown, W. Virginia (PB) (1959).

Lawrence, Prof. G. H. M., Hunt Botanical Library, Carnegie Institute of Technology, Pittsburgh 13, Pa. (1951).

Lawton, Dr E., Botany Department, University of Washington, Seattle 5, Wash. (1956).

LeBlanc, A., Shell Oil Company, P.O. Box 1509, Midland, Tex. (PB) (1958).

Lee, F. P., 7401 Glenbrook Road, Bethesda 14, Md. (1959).

Leffingwell, H. A., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Leisman, G. A., Dept. of Biology, Kansas Teachers College, Emporia, Kansas (PB) (1959).

Lellinger, D. B., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1959).

Lems, Prof. K., Department of Biological Sciences, Goucher College, Towson, Baltimore 4, Md. (1960).

Leonard, E. C., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1957).

Leppik, Dr E. E., Plant Introduction Station, Iowa State College, Ames, Iowa (1951).

Lewis, Dr H., Herbarium, Division of Botany, University of California, Los Angeles 24, Cal. (1953).

Lewis, W. H., Dept. of Biology, Stephen F. Austin College, Nacogdoches, Tex. (1952).

Li, Dr H., Morris Arboretum, Chestnut Hill, Philadelphia 18, Pa. (1951).

Little, Dr E. L., Jr., U.S. Dept. of Agriculture, Forest Service, Washington 25, D.C. (1951).

Lloyd, Dr John T., The Lloyd Library and Museum, 309 West Court Street, Cincinnati 2, Ohio (1953).

Long, Dr C. R., Dept. of Botany, U. of Mass., Amherst, Mass. (1960).

Loughridge, G. A., Culver Stockton College, Canton, Mo. (1951).

Lowy, Dr B., Dept. of Botany, Louisiana State University, Baton Rouge, La. (1954).

Lundell, Dr C. L., Texas Research Foundation, Renner, Tex. (1951).

McCleary, Dr J. A., 1249 Luanne Ave., Fullerton, Cal. (1960).

McClintock, Miss E., California Academy of Sciences, San Francisco 18, Cal. (1951).

McClure, Dr F. A., 5507 Charles Street, Bethesda, Md. (1955).

McGregor, Prof. R. L., Dept. of Botany, University of Kansas, Lawrence, Kan. (1951).

McVaugh, Dr R., Herbarium, Museum Building, University of Michigan, Ann Arbor, Mich. (1951).

Maguire, Dr B., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

Mahler, Wm. F., Department of Biology, Hardin-Simmons University, Abilane, Texas (1960).

Mamay, Dr S. H., U.S. Geological Survey, 338 U.S. National Museum, Washington 25, D.C. (1954).

Manning, Prof. W. E., Botanical Laboratory, Bucknell University, Lewisburg, Pa. (1958).

Martin, Prof. G. W., Dept. of Botany, State University of Iowa, Iowa City, Iowa (1951).

Martin, J. S., 1321 Bayon Road, Route 2, Bellingham, Wash. (1954).

Mason, Ch. T., Jr., Dept. of Botany, University of Arizona, Tucson, Ariz. (1953).

Mason, Dr H. L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Mathias, Dr M. E., Div. of Botany, University of California, Los Angeles 24, Cal. (1951).

Mauldin, Miss M. P., Southwestern Seed Service, Route 2, Box 220, Waco, Tex. (1951).

Mehlquist, Prof. G. A. L., Plant Science Dept., University of Connecticut, Storrs, Conn. (1951).

Menzel, Mrs M. Y., U.S.D.A., Florida State University, Tallahassee, Fla. (1959).

Metz, Sister M. C., Our Lady of the Lake College, San Antonio 7, Tex. (1951).

Meyer, Dr F. G., Plant Introduction Section, U.S. Department of Agriculture, Beltsville, Md. (1952).

Mickel, J. T., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Middleton, J. T., Div. of Plant Pathology, University of California, Citrus Experiment Station, Riverside, Cal. (1951).

Miller, A. H., Third Rear, 16 Hull Street, North End, Boston, Mass. (1956).

Miller, Dr Helena A., Dept. of Biology, Duquesne University, Pittsburg 19, Pa. (1955).

Miller, Dr Harvey A., Department of Botany, Miami University, Oxford, Ohio (1960).

Mohlenbrock, R. H., Dept. of Botany, Southern Illinois University, Carbondale, Ill. (1958).

Moldenke, Dr H. N., 15 Glenbrook Avenue, Yonkers 5, N.Y. (1951).

Moore, Dr D. M., 506 Vanderventer Ave., Fayetteville, Ark. (1951).

Moore, Dr H. E., Jr., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1951).

Moran, Dr R. V., Natural History Museum, Balboa Park, San Diego, Cal. (1952).

Morley, Dr Th., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1951).

Morton, C. V., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1952).

Mosquin, Th., Dept. of Botany, University of California, Los Angeles 24, Cal. (1956).

Muller, Prof. C. H., University of California, Santa Barbara College, Santa Barbara, Cal. (1951).

Mullins, Mrs J., 4762 Second Blvd., Apt. 305, Detroit 1, Mich. (1959).

Nevling, L. I., Jr., Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1959).

Nicolson, D. H., L.H. Bailey Hortorium, Cornell University, Ithaca, N.Y. (1959).

Norem, W. L., c/o Richfield Oil Corp., 5900 Cherry Avenue, Long Beach 5, Calif. (PB) (1960).

Norman, Mrs E. M., 221 Durand Street, East Lansing, Mich. (1955).

Ogden, Dr E. C., University of State of New York, New York State Museum, Albany 1, N.Y. (1951).

Ornduff, R., Dept. of Botany, University of California, Berkeley 4, Calif. (1960).

Ownbey, Dr G. B., Dept. of Botany, University of Minnesota, Minneapolis, Minn. (1951).

Ownbey, Dr M., Dept. of Botany, State University of Washington, Pullman, Wash. (1951).

Pabst, Dr M. B., Western Washington College, Bellingham, Wash. (PB) (1960).

Palmatier, E. A., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1951).

Papenfuss, Dr G. F., Herbarium of the University of California, Berkeley 4, Cal. (1952).

Parker, Dr K. F., 6014 Kirby Road, Bethesda 14, Md. (1952).

Patrick, Dr R., The Academy of Natural Sciences of Philadelphia, 19th and the Parkway, Philadelphia 3, Pa. (1951).

Payne, W. W., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1959).

Pederson, R. A., 2904 Barge, Lakima, Wash. (PB) (1960).

Perdue, Dr R. E., U.S.D.A. New Crops Research Branch, Beltsville, Md. (1954).

Perry, Dr L. M., 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Petersen, R. H., Dept. of Botany, Columbia University, New York 27, N.Y. (1959).

Piehl, M. A., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Pierce, R. L., Magnolia Petroleum Company, Box 900, Dallas 21, Texas (PB) (1958).

Pippen, R. W., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Poole, Prof. J. P., Dept. of Botany, Dartmouth College, Hanover, New Hampshire (1955).

Porter, Dr C. L., Rocky Mountain Herbarium, University of Wyoming, Laramie, Wyo. (1951).

Potter, D. E., 2814 South Pittsburg, Tulsa 14, Okla. (1959).

Prakash, U., The Biological Laboratories, Harvard University, 16 Divinity Ave., Cambridge 38, Mass. (PB) (1960).

Preece, Dr S. J., Dept. of Botany, Montana State University, Missoula, Mont. (1952).

Prescott, G. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Proskauer, Dr J., Dept. of Botany, University of California, Berkeley, Cal. (1956).

Pursell, R. A., The Pennsylvania State University, School of Forestry, Mont Alto Branch, Mont Alto, Pa. (1958).

Radford, Prof. A. E., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1951).

Raven, P. H., Dept. of Botany, University of California, Los Angeles 24, Cal. (1958).

Ray, Prof. J. D., Botanical Research, University of South Florida, Tampa 4, Fla. (1956).

Redfearn, Dr P. L., Jr., Southwest Missouri State College, Springfield, Mo. (1959).

Reed, C. F., 10105 Harford Road, Baltimore 34, Md. (1958).

Reed, Prof. F. D., Mount Holyoke College, South Hadley, Mass. (PB) (1955).

Reeder, Dr J. R., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1951).

Reese, W. D., Dept. of Biology, Southwestern Louisiana Institute, Lafayette, La. (1957).

Reis, Miss S. von, Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1956).

Ricker, P. L., 3740 Oliver Street, N.W., Washington 15, D.C. (1951).

Rickett, Dr H. W., New York Botanical Garden, Bronx Park, New York 58 (1951).

Roach, A. W., North Texas State College 5232, Denton, Tex. (1951).

Robertson, Mrs R., 508 South 41st Street, Philadelphia 4, Pa. (1960).

Rock, Dr H. F. L., Dept. of Biology, Vanderbilt University, Nashville 5, Tenn. (1954).

Rogers, C. M., Biology Department, Wayne State University, Detroit 2, Mich. (1958).

Rogers, Dr D. J., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

Rogers, Dr D. P., Dept. of Botany, University of Illinois, Urbana, Ill. (1951).

Rogerson, C. T., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1951).

Roller, Miss J. W., U.S. Forest Service Herbarium, U.S.D.A., 0106 South Building, Washington 25, D.C. (1958).

Rollins, Dr R. C., Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Rose, L. S., California Academy of Sciences, Golden Gate Park, San Francisco, Cal. (1951).

Rowell, Ch. M., Jr., Box 4075, Texas Technical College, Lubbock, Tex. (1954).

Rudd, Miss V. E., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1952).

Rudolph, E. D., Dept. of Botany, Wellesley College, Wellesley, Mass. (1953).

Runyon, R., Runyon Herbarium, P.O. Box 11, Brownsville, Tex. (1952).

Salamun, P. J., 4732 N. Elkhart Avenue, Milwaukee 11, Wisc. (1951).

Sayre, Prof. G., Russell Sage College, Troy, N.Y. (1951).

Scamman, Miss E., Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Schaeffer, R. L., Jr., 30 North 8th Street, Allentown, Pa. (1951).

Schallert, P. O., M.D., P.O. Box 262, Altamonte Springs, Fla. (1958).

Schemel, Dr M. P., Shell Development Company, Technical Services Division, 3737 Bellaire Blvd., Houston 25, Tex. (PB) (1955).

Schmitt, W. L., Smithsonian Institution, U.S. National Museum, Washington 25, D.C. (1952).

Schopf, Dr J. M., Orton Hall, Ohio State University, Columbus 10, Ohio (1951).

Schubert, Dr B. G., Agricultural Research Service, Plant Industry Station, Beltsville, Md. (1952).

Schultes, Dr R. E., Botanical Museum, Harvard University, Cambridge 38, Mass. (1951).

Schuyler, A. E., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Schweinfurth, Ch., 11 Boulder Rd., Wellesley Hills, Mass. (1951).

Scott, A. M., 2824 Dante Street, New Orleans 18, La. (1959).

Scott, Mrs E. E., Apartment 212, 2230 Durant Avenue, Berkeley 4, Cal. (1958).

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